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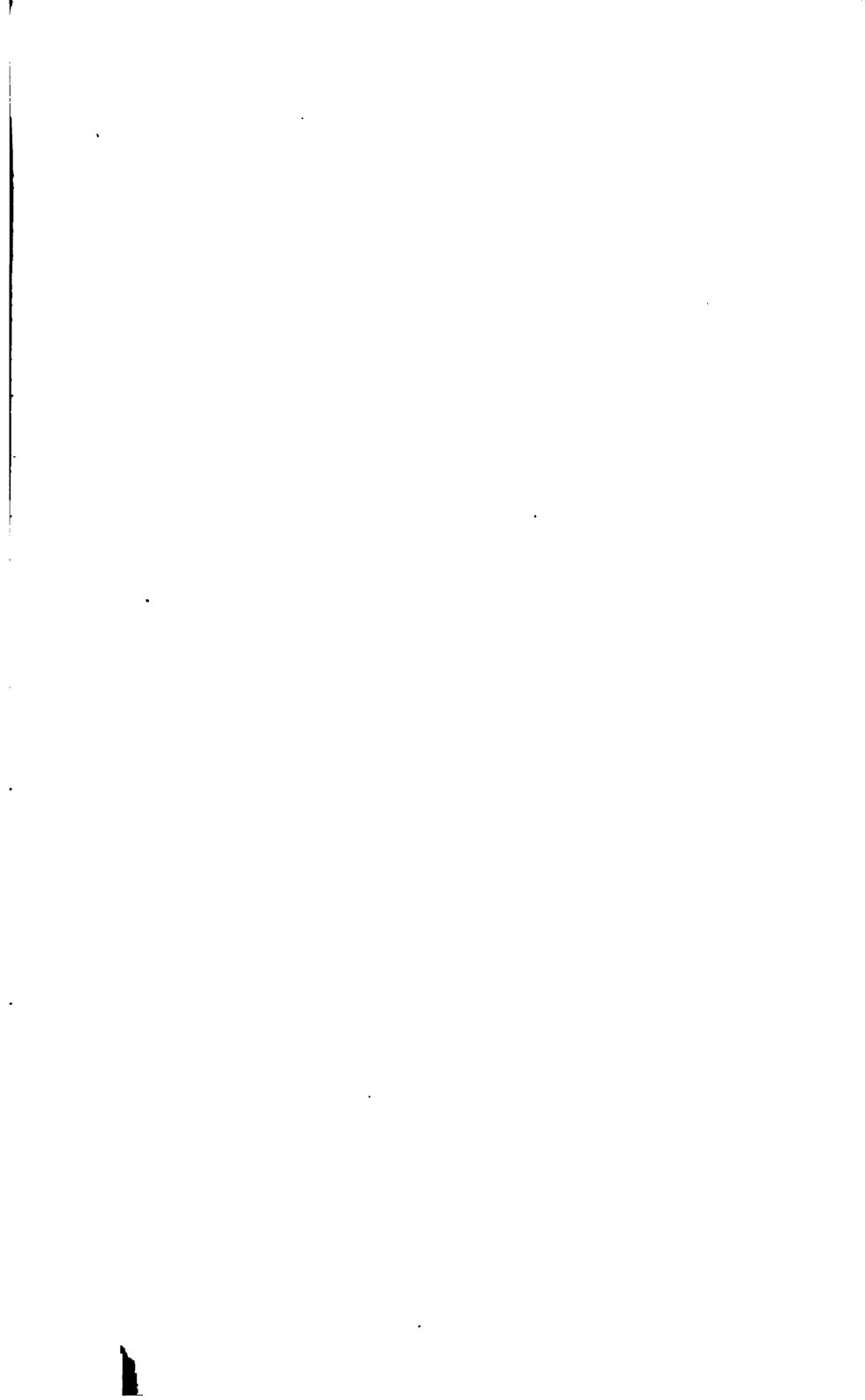
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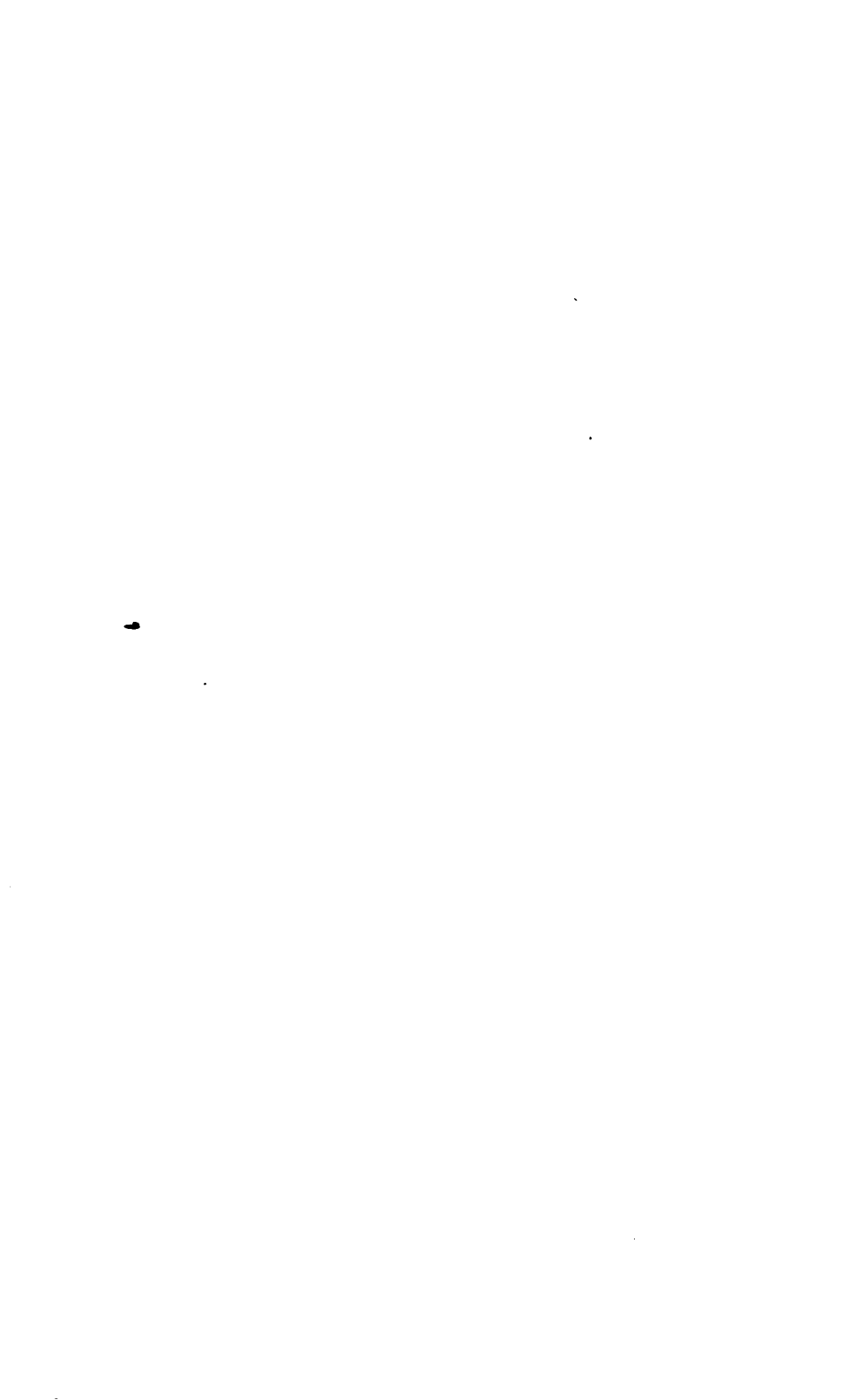
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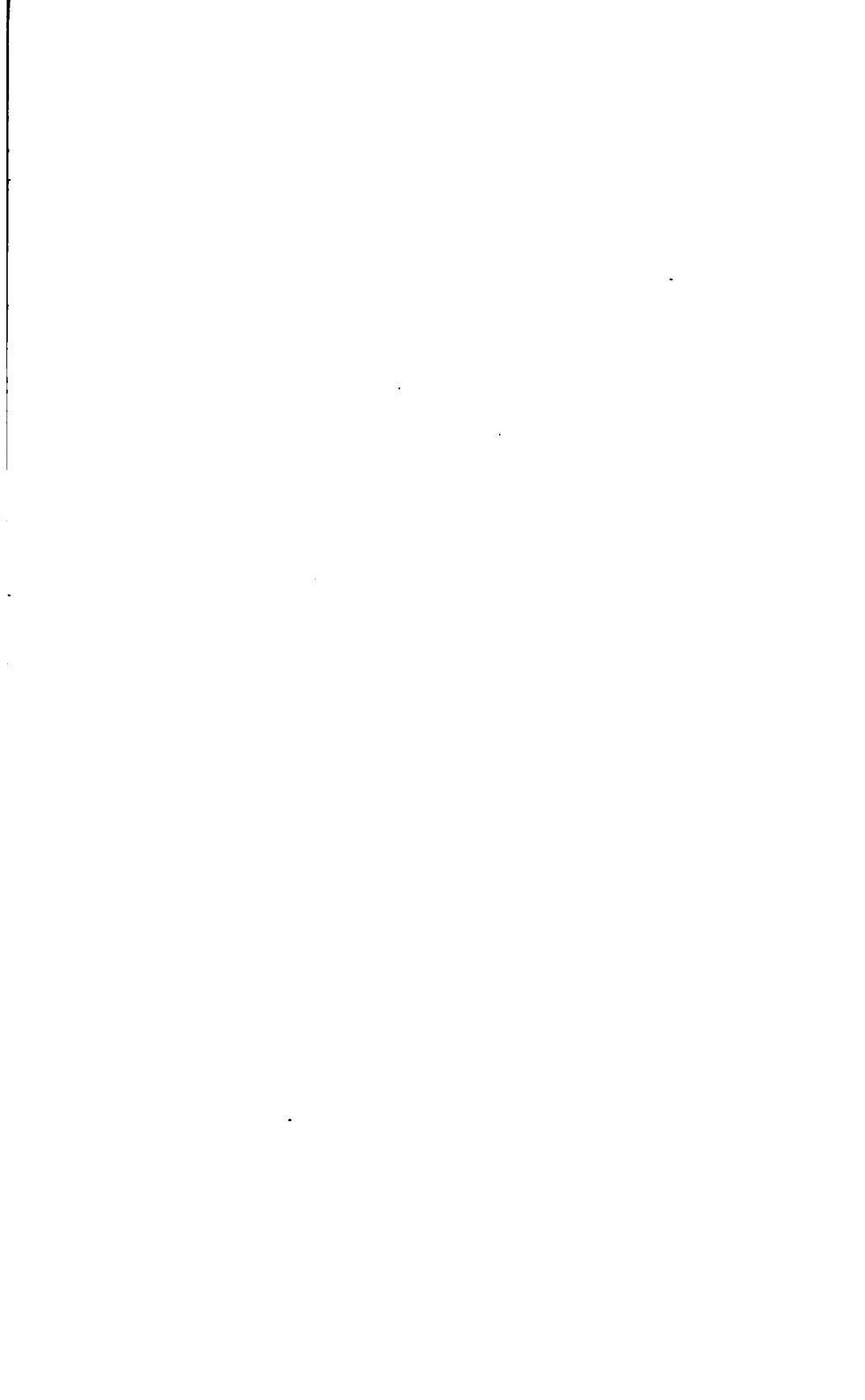












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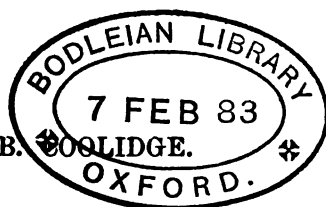
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THE
ALPINE JOURNAL.

AUGUST 1880.

MOUNTAIN TRAVEL IN THE SIKKIM HIMALAYA.
By MOR. DÉCHY.*

THE readers of the 'Alpine Journal' must be forewarned that in the following pages they will find none of those thrilling narratives of desperate ascents to which they are accustomed. I shall not offer them even the ordinary adventures of travel; nor do I propose at present either to draw any conclusions from the series of scientific observations which were collected during my journey, nor to describe in detail such parts of my wanderings as lay in little-known districts and often over untrodden paths. A sharp attack of fever which overtook me on my journey in the mountain districts of Independent Sikkim and on the frontier of Nepal, hindered the execution of the more ambitious portion of my programme, both in the way of geographical exploration and of mountain climbing. Yet it appears to me that remarks suggested by a visit to the noblest group of mountains in the world, may, however modest in their aim, have some interest for mountaineers. I feel the more confidence in the present case because I looked on all that came before me with the eyes of a mountaineer, well acquainted with our European Alps. I was thus able to measure the picturesque beauties of the mountain region I wandered through, the difficulties attendant on its exploration, and the means of overcoming them from the mountaineer's standpoint, a very different one in many points

* I have had much pleasure in translating for the Alpine Journal Monsieur Déchy's paper. I may add that his conclusions as to the season for mountain travel, and on other points, entirely agree with those of my relative Mr. J. G. Ritchie, of the Indian Civil Service, who, after some experience of Alpine travel, spent twelve months at and near Darjiling.—D. W. FRESHFIELD.

I venture to lay this down confidently) from that of the ordinary traveller, even although he may be in other respects a distinguished explorer.

Darjiling, the well-known sanitarium of Northern Bengal, lies near the frontier of Independent Sikkim. Raised high on one of the outer spurs of the Sikkim Himalaya, it offers an admirable starting-point for the exploration of this chain; while the ease and rapidity with which it can be reached from Calcutta secure for it the first rank among the hill-stations, even for tourists who only desire to obtain a glimpse of the most splendid portion of the Himalaya.

After some 20 hours of quick travelling over the alluvial land of the Ganges basin and the broad plains of the lowlands of Bengal, Siligori, the present terminus of the Northern Bengal States Railway, is reached. A change in the formation of the ground and in the vegetation that clothes it becomes here at once apparent. Siligori lies (302 feet) only 10 or 12 miles from the last spurs of the Himalaya, which appear thence as dark wooded masses with long gently curving ridges.

A fairly well-kept hill-road leads up to Darjiling. The usual dogcarts, 'tongas,' and riding-horses, which now stand in readiness for the traveller, are soon to give place to a steam tramway.

The zones of vegetable life which are passed through in rapid succession attract and retain the traveller's observation. Every step upwards brings him in face of a more and more enchanting vegetation. Immense tree-ferus, palms, *Shorea* robusta, slender bamboos, with other kinds of reed-plants, spring up above the dense underwood. Countless creepers, *Utricæas*, large-leaved *Calladias*, bind together the primæval forest, and weave themselves round the trunks and branches of the living, or the gigantic remains of the fallen or broken monarchs of the wood.

Punkabari (1,800 feet), with a dak-bungalow lying on the top of a projecting brow at the northern limit of the Terai—which has here already long lost its dangers—is the first station. Charming views are obtained from it on one side of the steep thickly wooded hills which rise out of dark damp hollows; on the other over the plains of Bengal, divided by the streams from the Himalaya, and overspread by a thin mist, which shifting from time to time clothes, where the sun's rays illuminate it, all beneath with a golden veil.

When late in the afternoon we reached Kursiong (4,848 feet), five or six hours from Siligori, the country was shrouded in mist; a damp cold wind blew over the little plateau. To

the west we looked down into the deep gorge of the Balassun. Thick forest clothed the steep slopes, broken near the top by clearings visible from afar, and made for tea-plantations.

Before twilight fell the atmosphere cleared. Suddenly there appeared to the north, high on the horizon, sharply defined cloud-like shapes. It was some moments before we could distinguish them as solitary snow mountains, which—unconnected with the lower ranges, from which long seething mists were separating themselves—seemed as it were to swim in the heavens. It was an opening scene at once simple grand and overpowering.

Next morning the horses and dogcart ordered for us not being forthcoming, I and my Meiringen guide, Andreas Maurer, determined to walk the first stage of the road to Darjiling. For the first time I was again wandering, my oft-proved trusty ice-axe in hand, towards the mountains. Never in starting for the greatest expedition of the Alps had I felt the same emotion.

The mountains are full of deep gorges, and break up into innumerable ridges wooded to the top by thick forests of deciduous trees. The great mass of underwood has vanished. In spite of the tropical character of the forests forms resembling the European are constantly observed. The culminating point from a scenic point of view of the road is the so-called Saddle at which it crosses the north-western spurs of the Sinchal range. This high ridge conceals the plains. In front the view opens over the mountain-system which stretches northwards to the highest summits of our globe.

The group of houses which constitutes the sanitarium of Darjiling stands on the brow or the uppermost slopes of the ridge which stretches northwards from the Sinchal Saddle (7,441 feet), towards Jellapahar, and branches further on into several shorter crests. Its different points vary in height between 7,200 and 6,500 feet (Observatory Hill is 7,169 feet). Its ridges fall in steep slopes, here wooded, there cleared and covered with tea plantations, into the deep glens of the Great and Little Rungeet, which flow round it some 6,000 feet below.

Early on the first morning after my arrival, roused by the news that the mists which had for several days been hanging over the mountains had lifted, I hurried up to one of the neighbouring brows to witness a spectacle which—I hasten to add my testimony—has been truly ranked among the most magnificent our globe can afford.

A stupendous mountain chain appears over a crowd of lesser

and nearer heights. The eye, after glancing down into the depths of the valleys lying at the spectator's feet, must raise itself 27,000 feet before it attains the culminating point of the snowy range, which surpasses his actual standpoint by 20,000 feet! It is some time before the immense scale of the landscape can be fully realised. In its details the chain displays the noblest order of mountain architecture. We see before us steep precipitous walls, over which ice-canopies hang down; sharp angular buttresses and bold ridges, which project from the broad flanks of the range leaving space between them in the folds of the mountains for gentle bay-shaped hollows, filled by dazzling snow-fields. The crest is sharp and indented, here rising in noble curves to some mighty summit, there lifting itself in a sudden surge to a sharp peak, its noble outline of shining snows and ice thrown out against the dark heaven.

In the centre, 45 miles distant, Kinchinjunga lifts itself above its neighbours—a huge predominant mass culminating in a double crest, the highest point of which (28,156 feet) is the third in height of the mountains of the world. To the west follow Jumno (25,312 feet) and Kabru (24,005), both broad mountain forms. East of Kinchinjunga rise Pundeem (22,017 feet), and the splendid abrupt peak of Nursing (19,146 feet). Above the serrated rock-ridges which succeed these summits, the snowy dome of Donkia (23,176 feet) is visible. From higher points Chumalari (23,929 feet), 84 miles distant, is added to the eastern view; while in the further west, over the Singalila chain, appear the snowy mountains of Nepal, crowned by Gaurisankar (29,002 feet), the highest pinnacle yet measured on the globe.

This vast mountain panorama, so impressive from its grandeur and sublimity, is not wanting in picturesque details of foreground and foliage. The dark gentle curves in which the subsidiary ranges rise in successive ranks towards the central chain give variety to the landscape, and serve as a scale by which to measure the barrier to which they converge. These crests are of bewildering complexity, and near at hand break open to afford glimpses into the deep gorges, in which the rich development of a tropical vegetation provides the landscape with a foreground totally different in character to those of the Alps.

It would be difficult to find any spot in the Alps to which to compare Darjiling. Naturally all valley-views, whether of a single group or of a larger portion of the chain, cannot enter into comparison. Darjiling is a natural belvedere, a mountain

view-point, lying amongst the outer ranges. But I am also unable to place in rivalry with it the view-points of the southern side of the Alps, such as Monte Generoso, Monte Motterone, or the Superga; or those to the north, such as the Rigi, Salève, Weissenstein, and the like. The panorama from Darjiling is not of mountain-groups, but of a great chain. Both the height and the distance of the ridge on which Darjiling is placed, or of the neighbouring Sinchal (8,606 feet), are admirably adapted for such a view of the Sikkim Himalaya. The eye of the spectator has here, from the depths of the Rungeet valley up to the crest of the snowy chain, a greater space to traverse than in any Alpine view, and the extraordinary height of the peaks makes itself fully felt, so that the impression created by the Sikkim Himalaya on first approach surpasses any to be obtained in our mountains nearer home. Neither I nor my Swiss guide Maurer could find in our memories any scene worthy to compare with, or to be placed near, this Himalayan panorama.

It must, however, be added at once that this impression will, as the traveller approaches the great chain, be diminished rather than deepened.

In order to reach the wide uplands stretching out under the Kinchinjunga group, which are used in summer as sheep pastures, and called Jongri, a long journey is necessary along a path which passes the Buddhist Convent of Pemiongchee, and the last permanently inhabited spot, Yoksung. A series of transverse mountain-ridges has to be crossed. It is possible to ride by a roundabout route as far as Pemiongchee. But the roads for the most part are steep footpaths leading in a monotonous succession of ups and downs to the bottom of the deeply worn gorges (witnesses to the effects of erosion in the Eastern Himalayas) which separate the ridges, to climb at once again to an equal height on the opposite slopes. The view of the chain seen from these ridges is similar to that from Darjiling, only that from these higher and more advanced stand-points it shows to less advantage. The lonely regions which stretch up to the snow and ice are of greater extent, and therefore more fatiguing and monotonous than in the Alps, where the ice of the glaciers is constantly married to the verdure of the pine forest. The beautiful fresh green pasturages of the European Alps, with their animated colonies of châteaux and herds, are absent. In their place, however, the traveller finds himself surrounded by glorious tropical forests, and at the season when the rhododendrons and magnolias carry their noble masses of red and white, and often sweet-scented,

PRO
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fore through a height of 14,000 feet, rises in complicated confusion a series of precipices, giddy ridges, rocks broken into the wildest forms, shattered glaciers, extensive snow-plains, towering crags and sharp ice-ridges. All the terrors of the high mountain region which, seen in the great peaks of the Alps, the Weisshorn, Dent Blanche, Matterhorn, Schreckhorn and their like, gave them for so long the credit of inaccessibility, are here found in double, nay in treble, force and number. It is this appearance of inaccessibility which—more particularly in the eyes of the practised mountaineer—raises the impression caused by this chain to a loftier and severer pitch, and also, I may be allowed to add, perhaps increases its charm.

I chose the track which, following the western tributaries of the Teesta, attains, by crossing an endless succession of outer ridges, the snow-region at the foot of the chain. The camps are fixed on the tops of these mountain ridges. The depths of the intervening gorges have to be traversed under the rays of a tropical sun. The scenery is monotonous. Marsh-fevers, and an endless variety of vermin, threaten the traveller. Nothing could well be more debilitating, nowhere could a worse training for a mountain expedition be found; and on account of the marsh-fevers, no more dangerous track could be set before a traveller fresh from Europe than that through these hot and damp Sikkim valleys.

The path over the Singalila chain and further N. along the spur which, projecting from the Kinchinjunga group, separates Nepal and Sikkim, held out promise of a much less fatiguing and dangerous route. It appeared, however, that several attempts to reach Jongri by this route (all, so far as I know, undertaken in winter) had miscarried, that to cross the high snow-passes in this direction involved the traveller in the greatest difficulties, and—this was the crowning obstacle—that absolutely no provisions were to be obtained on the road.

On the other hand, in favour of the valley route were the possibility of obtaining provisions in the scattered villages and convents, the existence of ready-made paths—which, it is true, in their engineering are entirely opposed to the instinct common to most dwellers of the mountains, to gain the heights by a more or less indirect and zigzag ascent—and last, not least, the well-known and frequented nature of the road.

My personal experience, however, convinces me of the advantages of the Singalila route.* On my return, when already

* Having had opportunities to talk over the matter with an English-

sick, I passed over it from Jongri to Darjiling. The difficulties of the ground do not deserve mention. Porters and provisions can be sent up to Jongri by the valley road to meet the travellers while they take the hill route, and even on this route itself they can manage to arrange with the porters a meeting-point. This may be fixed at Yangpoong, a pasturage which is accessible from the Sikkim valleys, and can also be reached by the Singalila road in some six days' march from Darjiling, without any serious circuit or descent. Moreover, on the upper ground on this track the sportsman will often be able to add to the provision-bag waterfowl or some kind of game. The usual monotony of our repast was here often broken by a noble dish of water-duck. The one serious disadvantage in this route is the lack of water in the period preceding the rains, in the stage between the Phalloom mountain and Yangpoong. But the traveller forewarned of this difficulty, can easily make provision beforehand, and, even if he has not, a short descent from the crests along which the sheep-tracks pass towards the Sikkim valleys, the slope to which has the heaviest rainfall, will generally bring him to water.

The explorer will be interested in noticing how the chain he is following serves not only as a watershed, but also as a weather barrier between Sikkim and Nepal.

From the picturesque point of view the Singalila route is far preferable to any other. For the first days a glorious ride leads to the Phalloom Mountain (12,042 feet). Dak-bungalows for the first few nights afford a roof and lodgings. They are not stations like those on the great Indian roads, but Alpine cabins, which seem as if designed to offer shelter to the wanderer, and to show him the choicest beauties of this noble mountain region. Each of these cabins is situated on a brilliant point of view. It is still the chain of the Sikkim Himalaya which is before us, but the various views do not all follow one another in the same straight line as from the ridges of the Sikkim valley road to Jongri, but in continual variety. Besides, from the part of the road north of the Sin-

man cognisant of Alpine climbing who has lived in Sikkim, I am convinced this Singalila route is the right one for a mountaineer. It was used partly by Dr. Hooker, and even that singular party whose adventures are described in 'A Lady's Ride Across the Snowy Range' managed also in the depth of winter to traverse some parts of it—with portmanteaus, and their maps at the bottom of them.—
TRANSLATOR.

galila mountain, the Nepal chain comes within the field of vision, crowned by the nobly-shaped slender pyramid of Gaurisankar.* Those who, like myself, have once in their lives seen from the high ridge of the Sidingbah the snowy crest of Gaurisankar lit with the burning blush of daybreak, will never forget the spectacle.† Yet it is impossible not to feel with bitter regret that, up to the present time, no European can approach even to the foot of the highest mountain in the world, or wander in the valleys round its base; that a forbidden ring, many miles in circuit, has been drawn round it, which no European may break through.

Snow passes have now to be crossed, between which lie narrow high glens, which lead up to the ice-region, and often offer landscapes of great beauty. I remember, in particular, one of these glens—that of the Yangtsep-Chu (Chu=river). No more Alpine scene can be imagined. The slopes on either hand rose in succession, like the side scenes of a theatre, to the head of the valley, which was closed by two noble peaks. A clear torrent streamed through the glen. We chose our camp under bushes of creeping pines. There was nothing but a strange variety of rhododendron to remind us that we were wandering in the distant Himalaya.

One of the most important questions I had to decide (it is of equal importance to all travellers) was what time of year ought to be selected for a journey through the Sikkim Himalaya, the programme of which included high mountain ascents. I am unfortunately unable to give any wholly satisfactory answer on this point. Midwinter and the rainy season appear to be equally out of the question. Of the months before the commencement of the rains—March, April, and the first half of May—I can give no favourable account.

I may take this opportunity to mention that continuous observations of the climate of Sikkim appear to me to be of high scientific interest, and of great practical importance for the plains of Bengal, which spread out at the foot of the Hima-

* I trust that all geographers, or at any rate all mountaineers, will revert to the ancient and natural name of the mountain. With every respect for the work of the 'Indian Survey,' it is impossible to acquiesce in the attempt permanently to attach to the highest known mountain of the world a personal and inappropriate name in place of its own. What Mr. Ball has said in the 'Alpine Guide' with regard to the bestowal of the name of 'Dufour Spitze' on the Allerhöchste Spitze of Monte Rosa is of treble weight here.—TRANSLATOR.

† See chromolithograph of this or a similar view in 'Across the Snowy Range.'—TRANSLATOR.

laya. The hot moisture-charged air-current, which blows up over these plains from the sea-coast, turns into mist as it reaches the ranges of Sikkim and comes into contact with the cold air of the mountains. The greater quantity of its moisture is discharged in heavy rains and dews on the southern foothills, as snow at the foot of the great chain. In the upper regions, early in the morning a violent north wind clears the disturbed cloudy sky, but generally only for a few hours. The vapours steaming up from the southern plains and the deep gorges soon recover the mastery. I must add that on the few days (and then only for a few hours) on which I saw the mountain tops clear, a strong wind was blowing over them, and I could clearly distinguish wreaths of snow carried up like smoke into the air. What this imports for the climber there is no need to enlarge upon.

There remain, then, only the months of October and part of November during which, after the rains, a long spell of clear still weather may be counted on—in seasons when a premature inroad of winter does not cut short with its snowstorms this interval.

Travel in the Himalayas is naturally different in most of its features to Alpine travel. Yet an experienced Alpine climber will generally hit on the right way to set to work. In the preparations several weeks of tent life must be provided for. The less luggage, the more chance of success. The chief difficulty is always the supply of provisions: with some forethought this, however, may be overcome. English preserved soups and meats will be of good service, but should, as far as possible, be economised, and reserved for the upper regions. Rice and tea naturally form one of the bases of the commissariat. 'Walking mutton,' in the shape of sheep or goats, may be taken along with the party, and eventually left in depot on the highest pasturage. The establishment of store depots at one or two points—on which, in case of need, it is easy to fall back—is strongly advisable, as also to arrange for stores to be sent up from Darjiling at fixed dates, and to spots determined beforehand. With such arrangements it might be possible to undertake the journey with only eight to ten porters. The porters, Lepchas and Bhoutias, under the command of a sirdar (headman), are willing fellows, and carry heavy burdens. On the other hand, they object to early starts, and cannot be induced to make a long day's march. It makes no difference whether the porters' burden be light or heavy, their day's work, their pace, are always the same. Always the same are the frequent halts, during which

the porters repose themselves, their load in baskets (kilta) on their backs, fastened by a strap across the forehead. As soon as their burden is supported on a bamboo staff, the whole row of porters begins, two or three times in succession, to whistle. Maurer always called it 'the goods train letting off steam.'

Whether the highest peaks of the Himalaya will be conquered is a question I am not prepared to give an opinion on. *Tout casse! Tout lasse! Tout passe!* But at any rate the climber will find himself face to face with an untamed, unchained nature. No one has yet attempted by the help of ropes, steps and chains to make a path for incompetence and ignorance to the great summits; nor has any one established a series of huts at a distance of scarcely an hour apart (as there will be soon elsewhere), like the drinking booths on the road to a fair.

The Sikkim and Nepal Himalaya appear to me to offer the greatest beauties of landscape, and the noblest peaks of any portion of the great chain which protects India.

Now, although in the Alps I admit mountaineering as a sufficient object in itself, yet I hold that the climber who turns his steps towards distant lands, still little visited and difficult of access, and offering a field for geographical discovery, should also give his attention to the advancement of scientific knowledge. The still, in great part, unexplored districts of Independent Sikkim, with their picturesque deserted valleys and glaciers and untrodden peaks, adjoin east and west to vast unknown countries, Bhoutan and Nepal; while, on the further side of the Kinchinjunga group, lies Thibet, as yet rigorously closed to Europeans. But I am convinced that the mountaineer will assuredly prefer to penetrate (as I had hoped to do) over the high unguarded glacier passes, rather than to attempt to persuade the Thibetan frontier guards to draw him over the boundary stream on a rope bridge, with the risk of finding himself left (as happened to one traveller) to hang for hours in the middle of the stream, shouting 'Pull! pull!' in every tone and every eastern dialect known to him, until he promise, if he may only be allowed to return to the bank he has left, never again to attempt to set foot in the country of the Great Llama.

SOME REMARKS ON THE SUFFAID KOH RANGE AND THE JELLALABAD REGION, AFGHANISTAN. By WILLIAM SIMPSON, F.R.G.S.

AT the meeting of the Alpine Club on March 2, I exhibited a number of sketches of the Jellalabad region, made during the late war. The editor of the 'Alpine Journal' asks me to put on paper the substance of the descriptive remarks I gave at the same time.

I need not recapitulate the communication to the 'Alpine Journal' which appeared in August of last year, dated 'Suffaid Sung, Gundumuck, June 1, 1879,' and which gave an account of the first ascent of Sikaram by a European, Mr. G. B. Scott, of the Indian Survey Department.* But I may again express my opinion that the cairn or Ziaret, on the summit of Sikaram, cannot be the tomb of Sayid Karram, but is most probably the result of the continuation by the Mahomedans of the ancient custom of raising heaps of stones, which is still to be found in the Himalayas and the Caucasus. Most of the old names of places have been lost since the Mahomedan Conquest, but we have yet some of the previous Hindoo or Sanscrit names left, these being principally connected with the mountains of the region, such as the 'Ram Koond' and the 'Hindoo Kush.' Our future relations with the country will open up a most interesting field of inquiry as to how far the present names may be only modifications of the former ones. From Professor Palmer I learned the other day that *Spin*, of 'Spin Ghar,' the Puchtoo equivalent for Suffaid Koh, is also a Persian word meaning white.

The first glimpse of the Suffaid Koh was got by the Peshawur Field Force during a reconnaissance made from Dakka, after passing through the Koord Khyber, whence we saw the eastern extremity of the range. At this end there is a very high-crested mass called 'Moorgha,' which by an ear

* Sikaram was ascended a few weeks after Mr. Scott's visit, on June 26, 1879, by Captain Gerald Martin, Bengal Staff Corps, who went up from the Kurram side, with a party of officers. He gives the height of the peak as 15,600 feet, and fixes its position as being in lat. $34^{\circ} 2' 21''$ and long. $69^{\circ} 56' 35''$. There is a very pointed peak seen over Kurram, called Keraira, which Captain Martin was inclined to think higher than Sikaram, but after the ascent of the latter this notion was given up. He also made an attempt to clear up the origin of the name 'Sikaram,' but without any satisfactory result. (*New Proceedings of Royal Geographical Society*, 1879, p. 634.)

accustomed to Hindostanee would most probably be rendered as the 'Cock,' but the natives say it means 'Ridge,' and afterwards, on our arrival at Gundumuck, it presented the appearance of a bold ridge, seemingly placed at something like right angles to the general direction of the range. This eastern termination is high, and on our first arrival had a covering of snow all over its summit, and we could see patches of snow on the range away to the westward, but at that season, the end of November, the summer sun had done its work, and no winter snow had then fallen. It was not till January that the tops of the less elevated peaks began to whiten. Although we had no rain in the valleys, yet clouds often gathered in masses along the mountain tops during the winter, and left a deposit of snow. This process went on all January and February, and even into March. Once or twice the clouds and mist enveloped the whole range of the Suffaid Koh as low as its base, and on clearing off the snow was visible very far down, but it soon melted away from the lower spurs. This range was opposite my tent door in the Jellalabad Valley, where I remained for three months and a half. The Moorgha was away on the extreme distance on the left, and the peaks about Sikaram, beyond Gundumuck, terminated the view on the right. After the whole range had got well covered with its winter whiteness, it was a most beautiful sight, and excited longings for a nearer acquaintance; but, owing to the unsettled condition of the country and the excited state of the tribes, it was impossible to make excursions of any distance from the camp.

On the other side of Jellalabad Valley is the Ram Koond. This is not a range, but a single grand mass towering above the hills around to over 14,000 feet high. On our first arrival at Jellalabad, in December, this peak had no snow on it, but the mists gathered also round its summits during the winter, and it gradually whitened till it became a very splendid object, particularly when the rays of the setting sun struck upon it.

There is a small koond or lake near the top of this mountain, from which it derives its name, which means the 'Fountain of Ram.'* It is also called the 'Umrit Koond,' or Fountain of Immortality. These names are purely Hindoo, and to the followers of that faith the summit is peculiarly sacred, and

* In printing my former communication, in the number for August, 1879, there is a typographical error on p. 291, where this is rendered the 'Fountain of Rain,' instead of the 'Fountain of Ram.'

pilgrimages are made to it. The followers of the Prophet seem to have accepted the sanctity of many spots from the Hindoos, and the sacredness of this mountain top they have accepted, for they also make pilgrimages to the summit. Somehow or another they seem to have developed traditions of their own, which it is rather difficult to account for. They believe that the ark of Noah rested on this peak after the deluge, and that the ark can yet be seen there, but only on Fridays, which is the Mahomedan Sunday. A valley comes from the Ram Koond into the Kunar Valley at Islampoor, which is known as the Durra Nooh, or 'Valley of Noah,' down which the patriarch with his family and all the beasts came. The Mahomedans have a similar tradition about the central peak of the Suliman Range on the Indus, which is called the Tukht-i-Suliman, or Throne of Solomon. Here also, I have been told, it is believed that a part of the ark is still visible, and may be touched by those visiting the spot, which is a place of pilgrimage. From these instances it will be seen that Ararat has rivals in the field. In the Lughman district, which is next on the north-west to Jellalabad, is a celebrated shrine, supposed to be the tomb of Lamech, the father of Noah. Mahomedans are noted for their worship at tombs, but in Afghanistan this form of devotion is perhaps followed more than in any other part of the East. Every village has its *ziaret* or tomb of some holy man, and those of particular sanctity bring pilgrims from all quarters to it. Among these tombs are some which are known as 'Nau Guz Wallahs,' or Nine Yard Fellows, but there are some also known as 'Chalis Guz Wallahs,' which implies Forty Yards; but in point of fact any tomb over nine yards is classed among the Chalis Guz, and Lamech's tomb belongs to this number. It is nearly fifty feet long, and about seven feet wide. Over it there is a structure which is said to date back to the time of Mahmud of Ghuznee. The origin of these large graves has long been a puzzle, but the following suggestion may perhaps explain the matter. In the Buddhist period colossal figures of the Sleeping Buddha were common, and we know from the Chinese pilgrim Hiouen Tshang that early in the seventh century there was a statue of this kind at Bamian 1,000 feet long. Such figures brought pilgrims, and the shrines were no doubt preserved, on account of the revenue they produced, after Buddhism had disappeared, and it would not be difficult to change the sleeping figures, formed of mud and plaster, into long mounds, which thus became tombs or *ziarets*, as they now call such monuments; the previous Buddhist name being

changed at the same time into one belonging to some Mahomedan saint of repute.

I now turn to make some remarks on Kafiristan, a perfectly unknown mountain region, which yet awaits a Grant to walk over, or a Burnaby to ride through it. The early notion that the inhabitants of Kafiristan were the remains of Greek colonies left by Alexander is now completely exploded. Some one wrote a letter to the *Times* the other day, and repeated all the old nonsense on the subject. The author must have confined his reading to the books of forty years ago. Kafiristan is on the southern slopes of the Hindoo Koosh; there is one route to Central Asia from Cabul, and there is another *viâ* Cashmere and Yarkund, but there is no beaten track between. The Hindoo Koosh may be crossed in many places, but there is no trade route, and no line by which conquest came through Kafiristan, hence the region is isolated. It was owing to its mountain strength that the Mahomedans have never conquered the country, and even Buddhism, with all its persevering energy of proselytising, never seems to have converted it. Hence it is supposed that the people have remained with their ideas, customs, and religions unchanged from a very early period, as early as, if not before, the date when the whole of Afghanistan was Hindoo. From this it will be understood how important it will be to have accurate knowledge of the condition and civilisation of such very primitive tribes as the Kafirs. Efforts have been made to enter the country, but, owing to the jealousy which has resulted from the efforts at invasion made by the Mahomedans, no one has yet succeeded. Major Tanner, of the Survey Department, made friends with some of the Chuginis, a tribe on the slopes of the Ram Koond, and acquired a few words of their language. Under the protection of these people he started on an attempt to get into Kafiristan, but he found that the language he was learning would become an unknown tongue after crossing a couple of valleys beyond that of the Chuginis. From this and other causes Major Tanner found that the effort would be useless, so he wisely returned. From people belonging to the surrounding tribes, and more particularly from Nimchas, a name applied to those who have been born Kafirs,* but become Mahomedans, some slight knowledge has been collected regarding Kafiristan. It is a country of the grape, and wine is

* *Kafir* is the same word we hear of in Africa, and in Mahomedan countries. It might be rendered as 'unbeliever,' or 'infidel,' in relation to the faith of Islam.

made and used. It was the sight of vines and ivy, somewhere not far from the present Jellalabad, which confirmed the Greeks with Alexander in their belief that it was from that part of the world Dionysos came, and they held high festival in honour of the god while passing through on their way to India.* The houses are constructed principally of wood, and elaborately carved. Chairs are used, which is a marked distinction from the habits of the people of India, where we have the remarkable fact of a population of 200,000,000 who manage to exist without seats. The Kafirs bury their dead, placing the bodies in a box, which is laid on a shelf of rock on the top of a hill. Their custom is to put a stick over the body, with a notch upon it for every Mahomedan the individual had killed. They have temples which contain images of their gods, generally carved in wood, and the walls are ornamented with the antlers of deer. Among their gods they have the name of Mahadeo, showing a Brahminical connection in their faith, but their principal deity, of which they consider all the other gods to be merely fractional parts or incarnations, is Dogan, a name almost identical with the fish god of the Euphrates Valley and Syria in ancient times. The kings of this region are called Oda and Odashooh. One of their customs presents another difficulty which an explorer will have to encounter, and that is, the first woman he might chance to meet—or party of women, for polygamy is allowed—would propose to him on the spot, and the answer he gives will be of but small consequence so far as the final result is concerned; while once in the bonds of matrimony in Kafirstan the fair creatures are said to take great care in preventing the only means of getting a divorce in that land—that is, by making a bolt of it.

I shall next give some account of the explorations I carried out among the Buddhist remains of the Jellalabad Valley under the auspices of the late Sir Louis Cavagnari. The remains of the Buddhist monasteries and monuments are so numerous that they would imply the existence at a former date of a population of monks two or three times as great as the whole population of the valley at the present moment.

* Alexander's people identified a city 'between the two rivers Coppenes and Indus,' which they supposed was named after their god, and they called it *Dionysopolis*. At the west end of the Valley of Jellalabad the town of Adinapur is referred to by Vivian de Saint-Martin as the remains of the name. He explains the original word to have been the Sanscrit *Oudyanâpura*, 'la Ville du Jardin,' and thinks that the Greeks supposed it was derived from *Dionysos*.

thus showing that the country has gone backward in civilisation since the Buddhist period. It cannot now be said that either art or architecture exists. Houses are constructed of mud. Jellalabad is only a large village formed out of this material; its walls are of the same, and its streets are filled with dust and filth. The name Jellalabad means 'City of Splendour.' Our soldiers, not seeing any splendour, and not caring much about questions of etymology, gave it what they thought to be the nearest English equivalent, and called it 'Jolly-be-dad.' In the days of Buddhism both art and architecture flourished, and the remains show that there must have been great wealth in the region. The Chinese pilgrim Hiouen Tsang states that at a monastery at Hido—now Hada, in which was preserved a celebrated relic, the skull-bone of Buddha—the buildings were covered with gold, and he describes other buildings which were decorated with gold and precious substances, as well as with sculpture and paintings. One of the results of archæological research in India has been the discovery that a Greek influence in art and architecture had penetrated as far as the Indus and into the Punjab. This influence is assumed to have come by way of Bactria at some period after the date of Alexander. This point was for some time doubted, but it is no longer a subject of dispute, and during my stay in the Jellalabad Valley I collected sufficient amount of data to extend our knowledge on this interesting branch of study as far as that locality is concerned. In one of the explored Topes I was fortunate enough to reach its central cell, where I found a gold relic-holder, about four inches long, and set with stones; along with it were twenty gold coins, each being about the size of an English sovereign. Seventeen of these were Indo-Scythian, dating from about the end of the last century B.C. and the beginning of the first century of the Christian era. The three other coins were Roman, and belonged to the reigns of Domitian, Trajan, and the empress of Hadrian. Thus we have evidence that coins came as well as art from the West at that period, and these would indicate a commercial connection reaching as far as the Mediterranean, which gives us another glimpse of the civilisation of the time. Major Cavnari sent all these objects to Lord Lytton, and they will form part of the very fine collection of coins from that part of the world in the India House.

Once only at Gundumuck had I a chance of going up the sides of the Suffuid Koh, and on this occasion it was but a short distance. The ascent was made in company with the late Sir Louis Cavnari, a name you are now familiar with,

owing to his sad but heroic end. I can speak of him as a friend; for six months we were in camp together, and during that time I was brought into close relations with him. He supplied the working party of natives for my explorations at Jellalabad, and the success which attended them gave him great satisfaction, and he was highly pleased at being able to send the results to the Viceroy. I can speak in the highest terms of him as a man, and I know well of the great ability he brought to bear on the department to which he belonged. Had he returned to Cabul with Yakoob Khan after the Peace of Gundumuck was signed, I have no doubt that I should have gone with him, for my desire was strong to reach that place, in order to get to Bamian, a spot about 100 miles still farther to the north, on the road to Balkh, where there exists a remarkable group of caves and colossal figures cut out of the rock, which have never been properly drawn. He knew of this desire on my part, and from our relationship I have no doubt but he would have permitted me to have accompanied him. When the peace was signed he had not received his appointment, and he was ordered back to Simla. I confess to having left Gundumuck with feelings of great disappointment at the non-realisation of my hopes, but since the unfortunate events at Cabul have taken place I look upon it now as probably lucky that I did not succeed in my efforts to penetrate further into Afghanistan. I also knew the other officers, Jenkyns, Hamilton, and Kelly, who fell so gallantly together in the Residency at Cabul. To know people, and to have been intimate with them, adds much to one's feelings on hearing of such a fate as befell these men. I never think of Cavagnari's death and the struggle with his assailants but our visit to the Suffaid Koh comes back to my recollection, and from what I am going to relate you will see how the events are linked together.

It was on April 21 last year that we left the camp at Suffaid Sung. Tanner and Scott, of the Survey Department, went with us; Colonel Jenkins, of the Guides, and Rose and Bellew, of the 10th Hussars, were also of the party. We rode in the direction of the Murkhi Kheyl Gorge, and numbers of the Murkhi Kheyls joined us at the foot of the hills, where we left our horses. We climbed up the rocky side of a spur overlooking the valley by which the stream flows out from the mountains. We reached a commanding point about 8,000 feet above the sea, and as it gave me a good view of the Jugdul-luck Pass in the distance, as well as a peep of the snowy peaks of the Hindoo Kush beyond, I sat down to sketch. The

two survey men went up higher, hoping to be able to fix some of the more distant points, and all our party went up with them except Cavagnari, who sat down where I was sketching. It threatened rain, and a few flakes of snow fell. This, at the height we were, made it cold, and Cavagnari's chuprassie, with some of the Murkhi Kheyls, gathered some wood and lighted a fire, round which they sat. Among the Murkhi Kheyls I noticed an old man, whose face struck me, and I made him sit to take a sketch of him, and this led to Cavagnari asking his name and age, as well as other particulars. He was called Mullick Meer Alum, and on being asked if he remembered when the Sahib log were there before, forty years ago, he said yes, and that he was a 'juwan' or young man then, and that he was out with the others when the fighting took place. The hill near Gundumuck, where the last remnant of the 44th Regiment and the few officers and men, being all that remained after the massacre of our army, made their final stand, was visible from where we sat, and the man was led into giving a description of what he remembered of the event. The interest Cavagnari took in the old man's story was very marked. He was evidently anxious to get every possible detail from this eye-witness of the scene, and cross-questioned him on many of the points related. His account agreed perfectly with what we know from other sources. He said the Afghans would not make an attack on the hill while the ammunition of the soldiers lasted—they kept firing from a long distance; but as soon as they found out that the powder and shot were finished, the Afghans closed in, and a hand-to-hand fight began. For a short time the struggle was desperate; our soldiers, the old man said, fought like 'shaitans,' or devils, before they gave in. To all this I saw Cavagnari listening so eagerly that I am sure it went deeply into his memory, and the story has such a striking resemblance to what took place with himself and his companions, only a month or two afterwards, that I feel sure that on the day when they were defending the Residency, and surrounded by overpowering numbers, the memory of this old man telling his tale on the side of the Suffaid Koh must have come back to Cavagnari's thoughts, in the same way as the account of the events brought him back to mine.

A NEW ROUTE ACROSS THE BIETSCHHORN. By J. OAKLEY MAUND. Read before the Alpine Club, May 6, 1879.

FOR mountaineering purposes July, 1878, was one of the worst months in the memory of man. Scorching heat on one day was followed by thunderstorm and rain on the next; there was snow knee-deep wherever it had no business to be; rock mountains were sheathed with ice, and avalanches were tumbling about in every probable and improbable place. Dent and I had been for many days mournfully trudging up and down between Chamonix and our camp on the Dru, or hopelessly trying to outflank the sheets of ice that hung, plentiful but insecure, upon its northern face. To climb the mountain while in this state was palpably impossible, so at Jaun's suggestion we determined to leave the Chamonix district for a while, and try to make a new route up that, in one sense, most rotten of mountains, the Bietschhorn, trusting in the meanwhile that the weather would mend and the ice on the Dru melt.

A broiling walk through the Trient Valley and down the interminable zigzags above the Rhone valley brought us with the inevitable thunderstorm to the Hôtel de Vernayaz. The next day, in more heat and thunder, we took train to Visp.

Our plan was to camp at the head of the Baltschieder Thal, ascend, if possible, the Bietschhorn from the east or north-east, and descend by the usual route to Ried. The federal map fails to delineate the topography of this region with its usual accuracy, and the mountains rejoice in a sameness of names suggesting a paucity of ideas on the part of their god-parents. There are three Breithorns within a space of ten square miles. One of these is at the head of the Baltschieder Thal; another, flanking the Nesthorn, overlooks the Lötsch Thal from the south; while the third, a buttress of the Tschingelhorn, forms with it the southern boundary of the Tschingel Glacier.

The Baltschieder Thal is not a success among valleys; narrow, barren, and hot, it leads nowhere in particular, and has scarcely a habitation along its whole course. Two or three squalid children, with a lank pig or two, seemed the only inhabitants of the huts at its head.

We camped that night under the Fäschhorn, a short distance from the left moraine of the Baltschieder Glacier, above the ice-fall. We found a most convenient place for night quarters in a species of cave under a huge slab of stone, capable of holding six men. With a little levelling inside, then a

layer of rhododendron twigs covered with dry peat grass, we slept on cheap and luxurious spring mattresses, and found our bivouac as comfortable as could be desired. There is a most delicious spring within a few yards, but it is necessary to collect and carry your own wood, as there is not a tree within miles.

The night set in rainy, with thunder as usual, but when we turned out at two all was clear again. We started by lanternlight, and, after crossing a most odious and unstable moraine, struck a little north of east across the Baltschieder Glacier, and reached the snow-slopes leading to the Joch at daybreak.

The mountain was now in full view, and there seemed to be two routes which promised well. The nearer of these was a broad snow couloir, between two ridges of rock, which appeared to lead almost directly to the summit, and by this couloir we determined to make the attempt.

The other route lay up a ridge of rock which starts from near the top of the Baltschieder Joch, and is, I am sure, practicable. A very fine expedition might be made by ascending the Bietschhorn from Ried, descending by this ridge on to the pass, and then down to the Lötsch Thal again.* An hour and a half's easy walking brought us to the foot of our couloir, and one glance assured us of its impracticability. It was full of fresh snow in the most dangerous state, and, early as the hour was, avalanches were already beginning to sweep down it. We got over the Schrund with some little difficulty, and, making a dash for the rocks on the left, gained them just in time to see a rush of snow and ice obliterate the track we had followed. Once on this ridge of rocks we were in comparative safety, but during the whole of the morning the avalanches poured down the couloir on our right incessantly, and I am not exaggerating in saying that forty or fifty must have swept by us in the course of our climb. They sometimes passed hissing down within a few feet; so near indeed that as we looked at them descending from above, the doubt arose whether they might not leave their worn trough in the snow, and break down upon us on the rocks—a doubt happily removed when with a grand sweep the avalanche swerved away and dashed

* In 1866 Mr. C. C. Tucker and I gained by this ridge a point on the long northern crest of the Bietschhorn, above the junction of the ridge falling to the Baltschieder Joch and that forming the north limit of the Nest Glacier. An icy gale alone prevented us from completing the ascent.—D. W. Freshfield.

headlong beside our path. So strong an impression of one's own utter helplessness in face of such overwhelming force did they leave, that I shall in future always look at snow couloirs with far greater respect than I have hitherto felt for them. Both Jaun and Maurer (after the manner of guides in general) assured me that in all their experience they had never seen anything like it!

The rocks, which at first were easy, became more difficult as we advanced, and on more than one occasion we had to take to the snow, which was nearly waist deep, to turn some impracticable crag. At one time I thought we should have been beaten, for we had obviously strayed from the best route; but Jaun, who was leading, got us out of the difficulty by a most brilliant bit of climbing. There was no time to retrace our steps, and we were bound to go on in the line we had struck. The rocks we were on differed in some ways from those on the other side of the mountain. They were bigger, more difficult, and looked safer, which is an element of danger in itself; for whereas on the western face you mistrust everything you touch, yet here a bit of rock which allowed the first two on the rope to pass with impunity, often played the third some scurvy trick. Dent had experience of this! Jaun was leading, and at the moment was hanging on to next to nothing; I was next, feeling anything but 'ganz Stark' as I stood, perched on so small a projection that I almost felt I was taking a mean advantage of it, while Dent, who was below me, was clambering across a rock face that we had passed in safety, when I heard a yell from Maurer, then the crash of something falling. On looking round I saw Maurer sprawling all over a slab on to which he had sprung to avoid the mass of rock that was now bounding by him; while Dent, surprised but calm, and half shrouded in a cloud of dust, was hanging on by his finger-tips, while his legs dangled helplessly in space. Luckily for us all, the rock he held was firm, and in a moment Maurer, whose face had developed a rich plum-coloured tint under the influence of the sudden excitement, planted his axe-head so as to give him foothold, and with a swing and a heave the rock was topped, and the danger past.

At ten o'clock we had reached the crest of the Bietschhorn, which connects the Breithorn with the main peak, and overlooks, almost overhangs, a branch of the Bietsch Glacier, some 2,000 feet below. The weather, which had been anything but promising, now took a decided turn for the worse. The summit of the mountain was enveloped in thick, driving clouds, and a cold, biting wind arose. We, however, still stuck to

our work, and without further incident, and always by the same rock ridge, reached the summit at 1.30. We had thus taken over ten hours in the ascent from the sleeping place, which would give an average of about 400 feet an hour; and as we were in fair condition, this will, to a certain extent, show the difficulties we had encountered.

I have no doubt, if the mountain had been in better order, that we might have climbed it in little more than half the time, but we dared not venture into the couloir, and the rocks being in many places buried in snow, were very much nastier than they need have been. As it was bitterly cold, and the view was totally obscured by falling snow, we scarcely stayed a moment on the summit, but made straight for the usual line of descent. The arête required great care, and took us a considerable time, as the soft snow was up to our waists in places, but directly we reached the rocks our pace improved, for the mountain was in very much better condition than on the other side. I will not trouble my readers with the details of the descent, as the western face is well known, and has already been described in the *Alpine Journal*.

We passed on our way the tracks of a party that had failed in the ascent two or three days before, and reached the forest above Ried just as darkness and the usual thunderstorm came on. I have been told that this forest is intricate and difficult to thread even in broad daylight, owing to the torrents which, in winter, obliterate long stretches of the path. Imagine it with torrents of rain falling and in darkness that only seemed the blacker from the blinding flashes of lightning that were momentarily lighting it up. With considerable difficulty we hit on a path which the guides assured us led down to the hotel. We followed it for some time, till some one pointed out that the route, though undoubtedly a good one, had two disadvantages—one, that it went uphill, and another that it led in the wrong direction. Instantly the guides hailed this as a happy discovery, and suggested a short cut straight down to the valley. I suppose the storm had bereft us of our senses, for we in a moment of weakness agreed to the proposition. Then followed two hours or more of unutterable discomfort and misery. We stumbled and slithered along for a short time, one moment running our heads into a pine branch, the next tripping with barked shins over some fallen trunk! We soon got separated, and how Jaun and Dent got down I never knew, but Maurer and I, having utterly lost our way, went scrambling down a sort of disused timber slide. It seemed perpendicular. There was long wet grass in it, and

a small torrent in the middle; but this mattered little, as we couldn't get wetter than we were. Every now and again I slithered down a rock-face six or seven feet in a stride, and found myself sitting half drowned at the bottom, with a small waterfall shooting playfully on to me.

As every road leads to Rome, so we know that downhill always leads to the valley, and, acting upon this unanswerable logic, we at length reached it.

We were in the valley, it is true, but between us and Ried there surged and roared a river which was quite impassable, unless we could hit off the bridge; and as we were by no means sure in what direction Ried lay, it seemed quite problematical whether we should make our port. The prospect was not a pleasant one! The rain was coming down in bucketsful. We were already drenched, and there was no shelter.

After wandering about for some time in a listless sort of way, Maurer was pleased to say that he had hit upon a track. How he discovered it I know not, for the darkness was so great that I could not see him a yard away. This track he followed with the most wonderful instinct, and it eventually brought us to a torrent, which, swollen by the floods of rain that had fallen, roared down with the most appalling sound. The two pine-trees that served to bridge it were submerged knee-deep. All this we discovered by the light of a bit of candle that Maurer had found in the depths of a remote pocket. Convinced that we were in the right path, we determined to cross, although it seemed uncertain whether it would be possible to keep one's feet, owing to the weight of water that poured over the trees. Having roped together, with about twenty feet between us, Maurer started crab-like across, with the candle under his hat to protect it from the rain. I had securely anchored in case he should be carried away, and paid out the rope as he crossed. We had miscalculated the distance, and I saw that there would not be rope enough by two or three feet. I hallooed to him to wait till I could pay out more, but the roar of the torrent utterly drowned my voice, and making a spring to clear the last few feet, the rope tautened, I felt the wrench, down went Maurer, the light was extinguished, and all was howling blackness again. In a few moments, greatly to my relief, a whisper came to me; it had started from the other side as one of Maurer's stentorian yells—'Kommen Sie, Herr Maund.'

It was all very well to say 'Kommen Sie,' but there were difficulties in the way. I had to wait for a flash of lightning to show me where the trees were, and Maurer was hauling

at me the whole time like a dray-horse, so that, had I let go of the rock to which I was clinging, he would inevitably have dragged me headlong into the torrent. By a series of severe jerks, and at a considerable expenditure of lung power, I made him understand that I should not start till he eased, and then, with my heart in my mouth and vivid remembrance of Amina in the 'Sonnambula,' I committed my feet to the water.

The passage turned out a good deal better than I had expected, and in less time than I have taken to describe it I reached Maurer, who was none the worse for his fall. When the tug came he had managed to clutch hold of the trees in falling, and found himself in shallow water.

We shook hands, in five minutes more reached the bridge across the river, and as we entered Ried met Jaun coming with a local guide and lanterns to return for Dent, who had wisely remained on the other side of the torrent. They had struck it much higher up, and Jaun had very pluckily waded across with the water above his waist. It was eleven o'clock when I got to the hotel, and Dent, who was found philosophically seated in a puddle by the side of the torrent, smoking a pipe upside down, arrived soon after. Our clothes were wet through, and there was but the young woman of the house from whom to borrow. Modesty forbade this last resource, but we succeeded by the aid of towels and blankets—and recollections of Mr. Alma Tadema's pictures—in dressing ourselves to our own satisfaction, and that of the waitress, as Roman senators, and in this costume did justice to a classical repast of stewed apples and mixed biscuits.

THE AIGUILLE DE TALÈFRE. By F. J. CULLINAN, read before the Alpine Club, May 4, 1880.

ON August 18 last Baumann and I arrived in Chamonix, and were there duly met by our respective guides, Emile Rey of Courmayeur and Joseph Moser of Täsch.

We had formed no very definite plans for our campaign beyond a determination to follow, if possible, Dent's footsteps up the Dru. We were ready for anything, but had postponed deciding upon a programme until our arrival on the scene of action. When I say we were ready for anything I mean this, that notwithstanding the fact of having come straight to our mountain-eering headquarters from the fogs and smoke and hard work of London, we were in good condition, with nerve and muscle as they ought to be when one aspires to high deeds in the Alps.

Now before I enter on the actual subject of this paper, I would invite your attention for a very few moments to the question of preliminary training for the Alps. It frequently happens that men go out quite unfit. They go direct to Zermatt or Chamonix or the Oberland in bad condition. They probably have taken no exercise worth mentioning for months, and their state is rendered worse by a long railway journey hurried over without a rest. They reach their destination, meet their guides, and straightway attack some great mountain without any adequate training or preparation. I have broken down myself on one occasion from no other cause than this, and I have known several instances in which men—strong men too—have broken down from the same reason. I have learned by experience, however, and I find that it is quite possible to combine with hard work and London air breathed for six or seven consecutive months a good state of bodily health and a fair condition for hard physical exercise.

Breasting mountains is no doubt the best training for mountaineering; but if there are no mountains within reach, then the next best training is pedestrianism over hills and hollows. Living in London I find that I can—like the peripatetic philosopher (in whom we may, I think, recognise a member of the Club) who has recently described his experiences in the ‘Pall Mall Gazette’—manage once a week at all events to put in my five-and-twenty or thirty miles on foot, through beautiful scenery and fresh air, leaving town in the morning and returning the same evening. A course of such walks religiously persevered in, combined with moderate exercise daily, be the weather what it may, keeps one in good condition; and by these means I find that I arrive at the foot of my mountain with a fair prospect of reaching its summit without any undue physical exhaustion.

There is another point connected with mountaineering which I think is of general interest and importance, and upon which I wish to say a few words—that is, the question of food on mountain expeditions.

We all know from experience how indifferent and how little appetizing is the food which the guides fish out of their knapsacks at the mountain halt and the mountain bivouac: the hard stringy meat, the strong cheese, the hard-boiled eggs, which were fresh about the period when the superannuated chicken, also offered for our mastication, was young and tender, are common memories to all climbers.

This is the sort of fare which is usually provided for us by the thoughtful host of our inn, and we eat it, often no doubt

thankfully enough, because we have a mountain appetite and would eat anything; but there are times when one sighs for something more nourishing and less unpalatable.

Last season Baumann and I took with us a large supply of tinned delicacies, and we found them an immense improvement on the ordinary Swiss fare. I do not mean to imply that we relied wholly on them; but we combined the use of them judiciously with that of native provisions, and the combination went down very successfully.

The subjects of training for the Alps, and of what may be entitled comforts in mountaineering, are, I think, very important ones, deserving of the attention of Alpine Clubs, and I should like to see them made the substance of a special paper by some experienced member of our own Club.

Well, at all events, as I said, we arrived in Chamonix in good form on August 18. We were met by our guides, and a few hours later were joined by Fitzgerald, who was already in the field, and had just crossed over the Col de Talèfre with his guide Lanier.

Next day we commenced our mountaineering for the year by the ascent of the Aiguille du Midi. While descending from this Aiguille, Lanier carefully scanned the face of the virgin Talèfre, and traced out the route which led us to its summit a few days later.

After two false starts, checked at the Montanvert by bad weather, patience and perseverance had at length their reward; this time there was no exception to be taken to the weather, and accordingly a quarter-past two on the morning of August 25 saw us under way, starting from the Montanvert by lantern-light.

When we had traversed about one half of the Glacier de Leschaux, and reached a point on that glacier about midway between the Aiguille de Talèfre on the left and the Pic du Tacul on the right, Fitzgerald called a halt while he and Lanier proceeded to make a final examination of the mountain. During the time that they were so engaged Moser, the chamois hunter, though ever on the look for chamois, was busy admiring the scenery. He is one of the few guides I have met with who appears impressed with the splendid scenes in the midst of which the Swiss guides pass so much of their lives. He turned to me more than once, and looking round would exclaim in his forcible German, 'Ah! this is beautiful! It is good to leave one's own mountains occasionally. You see fine things even in other districts also.' Meanwhile his trained eye soon discerned three chamois crossing a snow slope on the

any great distance intervening between them. The only safe course is to make one party and stick close together.

We followed our line of ascent as nearly as possible, and the monotony of the descent was unvaried until a startling incident, revealing the one danger of the mountain, rudely awoke us (or at least one of us) from fancied security.

We had reached the point on the mountain where it became necessary to recross the right hand couloir in order to get on to the rocky face leading down to the glacier below. We found our steps of the morning to a great degree obliterated by the mid-day sun: and Lanier, after a hurried look upward, struck across the couloir, cutting out the steps as rapidly as possible. Fitzgerald was next on the rope, then came Rey, then I, Baumann next, with Moser last of all. The couloir, as I have already observed, was broad and steep, running right down the whole face of the mountain. I had got into that sleepy sort of state which often comes over one on snow slopes in the mid-day sun after a sleepless night and hours of hard exercise, and was moving along thinking about nothing in particular, but keeping pace in a mechanical sort of way with Rey in front, stepping when he stepped and driving the head of my axe into the hard snow above. Suddenly I was recalled to consciousness by loud yells from Lanier, 'Vite, vite! Monsieur Coolinan, vite, vite!' Instead of going any faster, however, I stood still in my steps for a single moment, when in the same instant a great stone whizzed past my head a couple of feet in front. Another step and I should not have been here to read this paper. The stone came from the rocks forming the summit of the mountain some thousand feet above us, and had consequently acquired an extraordinary velocity. With great bounds through the air, landing on the hard snow and bounding off again, it disappeared from view.

We hurried on for the friendly rocks, which we reached without further incident a few minutes later. Rapidly we made our way down the Glacier de Pierre Joseph and arriving at a green spot amongst the belt of rocks which separate that glacier from the Glacier de Leschaux, watered by a pure spring, we halted for well-earned refreshment and repose. We reached the Montanvert at half-past four and descended to Chamonix in time for table d'hôte.

Three days subsequently Fitzgerald left with Courmayeur, wishing to ascend the Grandes Jorasses cross over Mont Blanc, while Baumann and Moser started for our long meditated tour. I have no account of our successful

not properly form any part of this paper, but I allude to it for the purpose of recording our opinion of Rey, who is a young and comparatively unknown guide. Lord Wentworth, in a paper published in the '*Alpine Journal*,' speaks of him as follows: 'Rey, though only thirty, is the best guide I am personally acquainted with.' Baumann and I can fully endorse that testimony. I think we are agreed in the opinion that on a difficult rock mountain, such as the Dru, he is the best guide we have ever seen. His leading throughout our ascent was simply perfect.

In conclusion I may add with regard to the Talèfre, that a few days previous to our successful expedition, a large Italian party tried the mountain from the Courmayeur side. Fitzgerald observed their attempt as he was working up the Col de Talèfre. They crossed the upper part of the Glacier de Triolet and lost a considerable time in circumventing a bergschrund. They reached the northern ridge of the Aiguille, but while Fitzgerald was on the Col he observed the party turn back, as he thought on account of the difficulties which they seemed to encounter. Lanier, however, was of opinion that they were driven back by the cold.

I may further recall to your recollection that in the season of 1878 a distinguished party of mountaineers belonging to this club also tried the mountain. They, however, only succeeded in attaining a summit, up to that time nameless, but now bearing the proud title of the Aiguille de la Peau Blanche.

THE ENGADINE IN WINTER. BY THE
REV. C. E. B. WATSON.

It may interest as well the healthy as their invalid or overwrought friends to know something of the Engadine as it is in winter. Having enjoyed three winters at St. Moritz, I feel that it is really to be regretted that so fine and so healthy a winter climate should not be more taken advantage of. While terrible accounts of fog have reached us, both from London and Paris, here for ten weeks, from the end of November to the second week in February, we have enjoyed an almost uninterrupted spell of clear still weather, which for its sunniness I never knew equalled except on the Nile.

It is true the winter of 1879-80 has been the finest of the last three years. But speaking generally, though it can be unpleasant in winter here as elsewhere, as far as my experience goes the weather is more settled in winter than in summer; there is no time when the skies are so clear, or when the sun, shining through the clear frosty air and reflected by the snow, is brighter than in winter.

The sunsets in winter are especially beautiful; for only in winter does one witness those lovely and varied effects which, set off as they

are by the snow-clothed mountains around, seem to combine in colouring the richness of the tropics with the sharpness of outline peculiar everywhere to winter, and remarkable even in the clear atmosphere of Switzerland. The western sky over the Maloja becomes a cold yet rich cream colour, sometimes slightly tinged with pale green; the vault overhead is suffused with a delicate lilac. Over the eastern mountains beyond Pontresina, as soon as the sun has left the top of Piz Languard, stretches that pinkish lurid Alpine glow which, set off by the snow mountains, is known by the somewhat exaggerated title of Alpine fire; while looking down the valley of the Engadine, where a lower part of the horizon is in view, this Alpine glow is seen giving way to dark purple, and dark purple to indigo blue, as the shadows of night assert their influence.

Then we have our moonlight nights, when the bold outline of the mountains and the harsher shadows of night are softened, and the stillness seems complete; while the waters of the lake beneath, until bound with frost, shimmer in the soft light. It is a scene difficult to present to the imagination of those who have not witnessed it: I can only describe it as a lovely scene of enchanted repose, such as might well have suggested a page of the 'Arabian Nights.'*

Nor must I omit the more stirring, dazzling mornings after a snow-storm, when the air is peculiarly clear and crisp and invigorating, and the sun shines on the pines before the fresh snow has melted off them. After the light fleecy purity of the fresh snow has somewhat passed away, the monotony of white, no longer varied by the dark water of the lakes, strikes one as rather excessive. But we do not, as in summer, miss the deciduous trees which add richness and variety to the Bernese Oberland, for in winter they would only increase the lifelessness and desolation of the scene.

Taken as a whole, this winter has not been a very cold one; but on two occasions a small minimum thermometer of Casella's, hanging outside a window-sill, about thirty feet from the ground, has shown, not perhaps a lower temperature, but a more continuous succession of cold nights than in either of the two previous winters. Only for three or at most four successive nights in the last two winters the thermometer fell below Fahrenheit zero; but on the *nights* preceding December 6 to 11, 1879, the thermometer read $-4\frac{3}{4}$, $-3\frac{1}{2}$, $-12\frac{1}{2}$, -14 , $-18\frac{1}{2}$, -6 , and on the nights preceding January 19 to 26, 1880, -3 , $-7\frac{1}{4}$, $-\frac{1}{2}$, $-3\frac{1}{2}$, -1 , -5 , $-\frac{3}{4}$, 0 . St. Moritz village, it may be worth noting, shows less cold than Samaden, or even than the St. Moritz baths. On one occasion (January, 1877), when the thermometer at night fell here to -14 , at Samaden it fell to -26 , and at the St. Moritz baths, only three quarters of a mile from us, to -27 . Probably the considerable lower temperature of these last two places, though lying some two or three hundred feet lower than this, is owing to their nearness to

* One of our party, who has been all round the world, and has visited the inner ranges of the Himalayas, tells me he never saw the moonlight effects here equalled. The clearness of the air would doubtless make this a favourable place for star-gazers—if well wrapt up.

the waters of the valley, and to the fact that the colder air falls to the bottom of a valley; and this seems borne out by observations at Davos, for while the minimum temperature there on December 7, 8, and 9, 1879, read as near as possible in Fahrenheit, -20 , -24 , -20 , here, at a place 900 feet higher, but considerably more removed from the waters of the valley, our minimum temperature (taken indeed at thirty instead of four feet from the ground) is only -14 .

Probably the reason why the cold of the Engadine is comparatively so little felt is because the air is so dry, and because here, as elsewhere in the high Alps, there is less wind in winter than in summer, and the greatest cold is generally the stillest cold; while the very continuousness of the frost makes it easier to become acclimatised to it, at the same time that it warns one when and how to be prepared against it.

Again, though the mountains retard the appearance of the sun in the morning, and hasten its disappearance in the afternoon, as the sky is so often absolutely cloudless, there is a considerable amount of sunshine; and hence it is more than ever necessary to remind ourselves that the maximum in the shade is very different from the maximum in the sunshine. Often and often have we lunched on the ice; and this winter scarce a day has passed in the ten weeks' spell of fine weather in which some of our party did not sit out in the sun, unless it were on the rare occasions when there was wind. On the shortest days, the sun having to make its appearance directly over the top of the Rosatsch, is not seen till 10.15 a.m., but as the season advances, and the orb is higher in the heaven, while the slopes it has to surmount are lower, the sun's appearance is hastened with curious rapidity. Daylight, of course, in this wide valley, helped by the snow, begins long before and lasts after the appearance of the sun, and is probably of somewhat longer duration than in England in winter.

Then too, may we not add, that the *light* of the sun reflected by the snow, and intenser in winter than in summer, as well as its warmth, exhilarates and stimulates activity of the system, which, hand in hand with this the rarer air is indeed calling for in order to take in enough oxygen for the requirements of life. This theory of the effect of light, if a true one, may in part explain how it is, that at midday in the middle of February, when one *feels* too warm to skate, the sun produces so little effect on the ice. For whereas the *light* of the sun on organic beings seems to produce activity, and activity of the system warmth, it is only the dark *heat* rays of the sun which act on the ice.

The principal amusement here is skating, mostly on a flooded ice-rink (40 yards by 60), conveniently close to the Kulm Hotel, and, as occasion offers, on one or other of the five lakes, which freeze over at different times from the middle of November to the end of December. The season lasts till the end of February; but generally the best of the season, because the best of the weather is from about the beginning of December to the middle of February. The Statzer lake is the first to freeze, then the St. Moritz or Campfer lakes, then the Silser See, and the Silvaplana lake generally last. Nowhere in Switzerland, probably, is there so much certain skating, capable of development to almost any extent, according to the requirements of visitors. At pre-

sent little effort is made to utilise the lakes when once covered with snow; but since there are not merely spots where water comes down from the mountains, but as the Inn flows through four of the lakes, by making mill-dams to carry the stream over the piece of water which the current keeps open, large tracts of ice could be made good, when the dense rigid ice has become too seamed under the changes of temperature to make it sufficient merely to remove the snow.

On October 30 this winter's skating began on one of the small lakes or ponds with which the woods abound. But the skating on the Sils lake, December 8 to 11, is most worthy of note. Frozen over at the cold period above noted, when the thermometer fell several degrees below zero, the ice was excessively dense, and so clear that you could follow the trout as they swam underneath.

Between the north side of the tongue of land, which cleaves the Sils end of the lake for some distance, and the opposite shore, five groups of piles, in a line but at a distance from each other, and supposed to be the foundations on which lake dwellings were built, were very clearly seen. I understand from those who cut holes in the ice, in order to examine them further, that the top of the piles were about three or four feet under the ice, but that there was too much mud at the bottom of them to make it possible, without diving apparatus, to search for antiquities which might make good their claim.

The scenery from this part of the lake, while the black ice still contrasts with the snow around, is extremely beautiful. For the snow on the mountains adds beauty and softness to the somewhat barren grandeur of its summer aspect. The sledge-drive back to St. Moritz in the extreme cold of these few days was the least pleasant part of these expeditions; one afternoon in particular, with the thermometer already close upon zero, and a cutting east wind in our faces till past the Silvaplana lake, our party will not easily forget; and we were glad to find that as we drew more within the shelter of the mountains behind Pontresina, and approached St. Moritz, the wind had ceased to trouble us.

The Sils lake was long free from snow, but on a later visit (December 24) the ice was so scored with tiny white seams that there was not space left to cut one circle of an eight between them; it may be it was the extraordinary rigidity of the dense thick ice bound to the shores which caused it to seam sooner and more completely than usual. Hence the saying, when the ice cracks then it bears, because it is not till it has attained some density and thickness that it begins to refuse to respond to changes of temperature.

One advantage of this climate, which indeed is an advantage to all, but which has been put forward as a special advantage to those suffering from disease of the lungs, is the entire absence of dust in the air—not to say mud under foot—while the ground is covered with its winter's snow; and in mid-winter the snow is so dry that it will not bind into a snow-ball. It has also been not unreasonably said that where benefit is gained under the influences of an Alpine winter, a return to England will be attended with less risk than where the benefit has been gained in a warmer climate.

But I end as I began, it is really to be regretted that so fine a climate as this is in winter should be so little taken advantage of, whether by the healthy or by their invalid friends. For while Davos has become the fashion, the Engadine—which, judging by official statistics, yields in no one point in respect of climate, but has rather the advantage (even in respect of wind, which is sometimes erroneously charged against it)*—is unquestionably more beautiful, as well as more spacious; and though the Julier pass will probably always deter the worst invalids from the Engadine, and prevent its becoming a second Ventnor, to the advantage of lesser invalids, not to say of the strong and healthy who merely require rest and change, the Engadine always retains in the Maloja pass the great advantage of an easier exit to Italy at any time, in case the high Alps are not found to suit, or at any rate in the flitting time in spring, when the passes are at their worst; and this seems to be a far greater advantage than an easier access in October, when invalids go to Davos, and when the passes are just as they are in summer.

Except after a snowstorm the post crosses by sledges the Julier pass—the safest pass in Switzerland—somewhat quicker than the diligence post in summer. But sleighing with Engadine horses, though far more enjoyable than driving, is somewhat disappointing if one has formed one's ideas of speed on pictures of sledging in St. Petersburg or Canada.

The snow melting, though somewhat tedious—last spring very much so—is probably not unhealthy—though of course one must be prepared against the wet under foot. The skies are often perfectly clear, and the relative moisture of the air, I understand from the official who makes the observations with a hygrometer, is not affected by it; indeed, in Davos last March, some one who possessed a wet and dry bulb thermometer, if my memory serves me, was surprised to find the air somewhat drier. May it not be that the waters of the melting snow, rapidly descending the steep slopes of the mountains, as well as the waters of the valley swollen by their influence, are too cold to be readily attracted into the increasingly warmer air of the advancing season?

The thickness of the ice on the St. Moritz lake, when cut in January, was 1 foot 8 inches, and now, measured in March, 2 feet 6 inches. But as the thickness of ice depends partly on the absence of snow, which protects it from cold, it is no sufficient index to test the severity of a winter.

Spring flowers,† beginning with masses of white and of purple crocuses, follow with marvellous rapidity the retreat of the snow, for when the sun does get at the soil it has already attained considerable power.

* The results of official observations on the wind, for the months November, December, January, and February of the three winters preceding this, both at St. Moritz and at Davos, may be of interest. 1 representing the smallest amount registered, and 4 the greatest amount, the mean daily force of the wind for these three winters respectively was in St. Moritz, '52, '57, '59, in Davos, '56, '7, '71, in each case rather in favour of St. Moritz.

† While speaking of flowers, it may be interesting to note that so late as October 27 last year we found two Edelweiss still in flower, a thousand feet up the hills behind this hotel.

On the evening of March 4, I am told, some rain fell, an unusual occurrence so early as this. Just now we are passing through some prematurely warm snow-melting weather, and are enjoying a run of absolutely cloudless days. Skating is over. The post is on wheels. The little yellow *Tussilago Farfara* has put in an appearance (the English name I do not know, though common enough here.) The note of a woodpecker has been heard. The light and warmth of the sun are increased, and more than one afternoon lately have we sat without fire, and with windows open across.

I append a brief summary of observations, taken from the official registers at St. Moritz, for the months of November and December, 1879, and January and February, 1880.

Temperature, in Fahr., reduced from Celsius.

1879							
November				December			
Mean Temp. at				Mean Temp. at			
7 A.M.	1 P.M.	9 P.M.	Total Mean	7 A.M.	1 P.M.	9 P.M.	Total Mean
20½	32½	21½	25	10	25½	13	16½
1880							
January				February			
Mean Temp. at				Mean Temp. at			
7 A.M.	1 P.M.	9 P.M.	Total Mean	7 A.M.	1 P.M.	9 P.M.	Total Mean
12½	25½	15½	19	19	28	23½	23½

The maximum in the sun and minimum at night are not taken.

Snow Fall, in inches, reduced from Centimetres.

1879		1880	
November	December	January	February
Omitted to note. But I have noted <i>some</i> fell Nov. 2, 7, 20, 21, 24, and a sprinkling 12, 17, 18. (See next Obs.)	½ in.	Nothing measurable	About 1 ft.

Depth of winter's snow in February 29, 2 feet 2 inches; as the depth of fresh snow and old snow give very different results, the amount of snow melted into water, and reduced from millimetres to inches, is added.

1879		1880	
November	December	January	February
1¼ in.	Nothing mentionable	Nothing measurable	1¼ in.

Relative Moisture of the Air.

(100 representing the maximum amount.)

1879		1880	
November	December	January	February
68.2	55.7	52.9	65.3

*Force of Wind.**

(1 marks the smallest amount registered; 4 the greatest.)

1879		1880	
November	December	January	February
$\frac{1}{2}$	Between $\frac{1}{2}$ and $\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{2}$

For the Barometer I have no written observations, but I may safely say the mean has been below rather than above 23 $\frac{1}{2}$, according to a compensated pocket aneroid of Casella's. It may be from ignorance of special conditions, but the barometer in mountainous places strikes me as very untrustworthy as a foreteller of weather.

CECIL E. B. WATSON.

THE CANTAL. BY T. HOWSE, F.L.S.

OWING probably to the attractions afforded by the numerous baths in the district, the extinct volcanoes of the Puy de Dôme and the Mont Dore are frequently visited by English travellers. But the mountains of the Cantal, although more extensive interesting and picturesque, are comparatively little known. They also are of volcanic origin, but of a much older formation than those of the Puy de Dôme. These are modern

* I should much like to have supplied definite observations on the Föhn wind, both as to its amount and as to the relative moisture of the air while it prevails, but it has not been made the subject of a special register; and as the direction of the wind is taken as it reaches us in the valley, and a valley at its opening takes in wind from a good many points of the compass, to judge of the amount of Föhn from the general observations on the amount of wind, which comes from the direction of the Maloja (as I have heard done), is only deceptive. The St. Moritz registrar, however, assures me that during the winter months (to which my subject has confined my inquiries) the Föhn wind does not usually blow more than two or three times, and at the outside lasts not more than two days (I should be inclined to add, *or three*), and that here the relative moisture of the air is little affected by it. Though it is usually assumed to be a dry wind, so much so that in some Cantons there is a law prohibiting fires during its prevalence, I am also told that the hay *here* dries slower with Föhn than with north wind; probably much of the apparently conflicting accounts of its dryness may be reconciled by bearing in mind that the wind sometimes takes up moisture on its way, and condenses only on objects when it finds them colder than itself.

volcanoes, formed within the present geological period, whilst those of the Cantal belong to the Miocene formation. An eruption of basalt proceeding from the masses of the Plombs du Cantal, covered the country for miles around. Traces of this eruption are seen in the basalt capping many of the higher elevations throughout a large portion of the Department; it frequently presents the appearance of towers and castle walls. A hill near Cantal, covered in this manner, was actually utilised by Henry IV. as a fortress, and was for some time the abode of the Reine Margot, when in disgrace. He afterwards ordered the castle, which had been built within the basaltic ring, to be destroyed. The castle well still exists, and a fig-tree growing out of the rock is said to be a survival from the queen's garden.

The inhabitants of this department, as also those of the Puy de Dôme, are the Auvergnats, who in Paris are so frequently employed as commissionaires, concierges, &c., and have the reputation of being the most stupid people in France. Many stories are told illustrative of their density—among others the following. A man of good address, and wearing the ribbon of the legion of honour, took up his quarters at an inn in a village near Aurillac. He represented himself to be an *ancien militaire*; the quiet village suited him, and he expressed a wish to settle down there. After a few days he complained to the innkeeper that his wine was thick. The innkeeper admitted and deplored the fact. The stranger then stated that he knew an infallible method of clearing wine, and told him to procure two lemons and seven or eight hundred francs in gold. This the innkeeper accordingly did. The stranger then, cutting each lemon in half, placed in one of them the gold, and told him to take it into the cellar, and holding it tightly clasped in his hand to plunge it into the wine and wait until he came, for further instructions. In talking to the innkeeper, the other lemon was skilfully substituted for that containing the gold, and whilst the host was anxiously waiting for the instructor, that worthy with the plunder was already at the railway station, which was not far off. He has not since been heard of.

The peasants have a great antipathy to geologists and naturalists, and look with suspicion upon their proceedings. A landed proprietor told me that one of his farmers, complaining of the bad weather this year, said to him, 'Ce sont les physiciens, monsieur, qui amènent le mauvais temps; le bon Dieu ne serait pas si bête.'

They are not, however, *méchants*, like their neighbours of the Puy de Dôme, who occasionally heave stones at the scientific stranger, should he venture about alone. The inhabitants of both departments differ considerably from the usual French type; they have the short face and flat features characteristic of the German race, and many words in their patois point to a German origin: thus they say *Kartuffels* for potatoe, instead of *pomme-de-terre*. Living is good and cheap; one can board for six francs a day, including very fair wine, and in some places, especially Vic-sur-Cère, the meals supplied are quite luxurious. An excellent mineral water, called Eau de Vic, is much used, and very inexpensive.

The geologist will find very interesting fossil leaves, wood, &c., in

the Cinerite, a deposit of volcanic mud of the Pas-de-la-Mougudo, near Vic-sur-Cère.

Monsieur Rames, *pharmacien* at Aurillac, is well acquainted with the botany and geology of the district, and is most obliging in giving any information required.

There is in this district a great deal of charming valley scenery; but the traveller must not expect grand precipices and awful ravines. The hand of time has smoothed down most of the higher summits, although of volcanic origin; and they are generally covered with turf and dwarf vegetation.

The railway from Clermont Ferrand to Aurillac runs through the heart of the range. Good quarters may be had at two stations on the line, Murat and Vic-sur-Cère. Vic-sur-Cère is situated in a beautiful valley; but it is somewhat further from the principal summits than Murat. But the mountaineer and naturalist will find sufficiently good lodgings and food at Le Lioran, the highest ground traversed by the railway. This station is 1,150 metres above the sea, and from it the Plomb du Cantal, 1,858 metres above the sea to the south, and the Puy de Griou, 1,694 metres, and Puy Mary, 1,789 metres, to the north, can easily be ascended.

The Plomb (probably derived from *plan*) is a flat, shapeless mountain; but the others are true volcanic pyramids, sharp in outline and graceful in form. The most interesting but longest excursion is the ascent of the Puy Mary, and it commands the finest views. Before reaching the final pyramid, a gap in the ridge has to be crossed; this is called the Brèche de Roland, possibly from a mild resemblance to the more famous Brèche de Roland in the Pyrenees. At the foot of this *brèche* there is a rocky *cirque*. This is the best high botanical station in the Cantal range. *Saxifraga hieracifolia* is said to have been found here last year. It is a denizen of Norway and the Carpathians, and Styria is its western limit. I think *Saxifraga nivalis* must have been the plant found there, although Monsieur Martial Lamotte, Professor of Botany at Clermont Ferrand, who saw the leaves but not the flowers, is of opinion that it is *S. hieracifolia*. Unfortunately, there was this year much snow in the ravines, owing to the lateness of the season; consequently the rocks where it had been found could not be properly explored.

The flora, although not particularly rich or varied, is interesting from the presence of many Arctic and Alpine species, which one would scarcely expect to meet with on such mountains.

Among the most characteristic plants in the higher valleys, the following may be mentioned.

Meconopsis cambrica
Gentiana lutea
Mulgedium Plumieri
Gnaphalium norvegicum
Crepis lapsanoides
Senecio Cacaaster
Viola sudetica

Arnica montana
Lonicera alpigena
Doronicum austriacum
Streptopus amplexifolius
Genista purgans and *pilosa*
Saxifraga aizoon and *hypnoides*

The rare *Arabis cebennensis* is abundant by the side of streams near Le Lioran.

The following are the most interesting plants of the Alpine region.

Cochlearia pyrenaica	Anemone sulphurea
Sorbus chamaemespilus	Empetrum nigrum
Pedicularis comosa, foliosa, and verticillata	Arabis alpina
Saxifraga androsacea	Androsace carnea
Gentiana verna	Cerastium alpinum
Senecio brachychoetus	Genista prostrata (Plomb du Cantal)
Thlaspi virens	Tozzia alpina
Campanula linifolia	Sisymbrium pinnatifidum

The most characteristic plant of this region is *Androsace carnea*, but differing from the typical Swiss form by longer calyx and bracts, and by more glabrous leaves. There is a figure of it in the 'Botanical Magazine.' It is there considered by Sir J. Hooker to be a special form, and named by him *Androsace carnea*, var. *eximia*. The plate, however, represents a larger plant, with larger flowers of a deeper colour than any I observed in the Cantal. The locality given in the 'Botanical Magazine' is the summit of the Pic de Sancy in the Monts Dore; it is just possible that the plants found there may be still more divergent from the normal type than those of the Cantal. The forests of the higher regions are composed principally of the silver fir, *Abies pectinata*; it assumes here a peculiar appearance, not easily described, but reminding one of a gigantic *Lycopodium*. It frequently produces curious light-coloured shoots, caused by a fungus *Peridermium elatinum*, altering both the foliage and the ramification. There is a remarkably fine forest of this conifer at Le Lioran, through which the railway to Aurillac passes. This town is the *chef-lieu* of the department, but it is not to be compared with Clermont Ferrand, either in size, interest, or beauty of situation.

In conclusion, I can strongly recommend the Cantal to those in search of a novelty, and also to those who cannot spare sufficient time or money for Alps or Pyrenees.

T. HOWSE, F.L.S.

ALPINE NOTES.

INDIA RUBBER VERSUS PAPER AS A MATERIAL FOR ALPINE MAPS.—The following communications were read to the Alpine Club at the May and June meetings:—

'Gentlemen,—Last year a relation of mine ordered to Afghanistan requested me to send out to him the best maps of that country that I could procure. I went the round of the map-stationers, and found the fac-simile of this india rubber map at Messrs. Wyld's, which appeared to me to be more suited to the requirements of a campaigner than any that I had yet seen.

'I have since been informed by a distinguished officer lately returned from the Valley of Cabul that these maps were carried by all the staff and were highly spoken of by them.

'Sailors overcome some of their difficulties about charts by building nice glass-houses to protect both themselves and their charts from the

inclemency of the weather. But when away in boats for days together their charts suffer severely, becoming sodden and soiled, battered and torn.

'But there are others besides sailors and soldiers who require maps while engaged on arduous expeditions, exposed to every vicissitude of climate. Alpine climbers have to consult their maps in hail and snow, in rain and wind, in the fiercest sunshine, and in the sharpest frost. I have therefore thought it possible that the members of the Alpine Club might wish to provide themselves with portable maps manufactured of a more weather-proof material than paper.

'If I am rightly informed the Germans were the first to make use of maps printed on india rubber during their autumn manœuvres. Some officers wore them sown inside the front of their double-breasted frock-coats, so that by unbuttoning two or three buttons they could study the topography of the country without dismounting. At the same time the map was a protection to the chest.

'There was at first some trouble in devising colours that were unaffected by perspiration, alcohol, hot water, Lagerbier, etc., but these difficulties were at length overcome.

'One of the advantages attending the use of india rubber is that there is no delay in folding or unfolding, rolling or unrolling. There is no waste of valuable time in dangerous places at critical moments. The map may be put away as easily as a pocket-handkerchief and spread out again for consultation with equal facility. It would be more frequently referred to in bad weather, when the paper map is often not produced for fear of soiling it. It may be used to wrap up articles in the knapsack, to sit upon when resting on snow, and, if made large enough, as a waterproof sheet, or indeed for any purpose for which india rubber sheeting or clothing is now used.

'I have here the maps of Afghanistan, Zululand, and of the country round Staffordshire, which have been lent to me by Messrs. Wyld for the purpose of exhibiting them to this Club. The material on which the map of the neighbourhood of Stafford is printed is of a somewhat lighter description than the others, and appears to be of a pattern well suited to Alpine work. Its weight is $4\frac{1}{2}$ ounces. That of a sheet of the Alpine Club map printed on the same substance would be 4 ounces, as the Club map is a little smaller.

'It now rests with the members of this Club to consider whether they prefer the paper map of the past to the india rubber map of the future.*

'EDWARD DOWNES LAW.'

'COTTON VERSUS INDIA RUBBER.—As some difficulties have arisen with reference to the publication of an india rubber map of Switzerland, I wish to point out to the Club what has already been done in India towards manufacturing portable maps on another material.

'There are on the table before you two cotton maps of Afghanistan which Major-General Sir Henry Thuillier has been kind enough to give me, and also a map of Banda, printed for the use of the Camp of

* At this time I was under the erroneous impression that the plates of the Alpine Club Map were the property of the Alpine Club.—E. D. L.

Exercise, for the loan of which I am indebted to the courtesy of the Secretary of the United Service Institution.

'These maps were printed in India, under the superintendence of Major-General Sir Henry Thuillier, who was for many years at the head of the Great Indian Trigonometrical Survey. He informs me "that he has long made use of simple calico, which he believes to be the very best material for all military purposes, that it takes lithographic ink very well, and that nothing disturbs it. As a pocket-handkerchief stuffed anyhow into the pocket or holster it serves the purpose of a towel at a ford, and also gives the features of the country. India rubber will not do in India, except in cold weather, of which there is but a modicum. These maps have been used in all our late campaigns in India."

'I have the honour to present the two cotton maps of Afghanistan and an india rubber map of part of Staffordshire to the Alpine Club for them to experiment upon or deal with as they think fit.' E. D. L.

THE CLUB MAP CUPBOARD.—For some time our collection of maps had been inaccessible and incomplete. The alterations in our rooms made last year furnished a good opportunity to remedy both defects. The first was easily dealt with by the provision of a map cupboard, with lettered drawers, containing the maps of the various parts of the Alpine chain arranged consecutively. The second defect, to remove which was a work of some time and trouble, Mr. C. C. Tucker kindly undertook to look to.

His first aim has rightly been to complete our collection as far as the best large scale government surveys are concerned. The Alpine chain is included in five states—France, Switzerland, Italy, Bavaria, and Austria.

France has supplied us with the sheets of the new survey on the scale of $\frac{1}{80000}$, containing the Alps and Pyrenees, and with the maps of the Military Frontier on the same scale, but partially coloured with contour lines, and on smaller sheets. These maps as a whole have very great merit; but they suffer in parts from many districts having been surveyed before guides competent for glacier work existed in the French Alps: hence they are now undergoing a good deal of correction from French climbers. The hill engraving is fair, but not of the highest order. A French Bureau can do better, as will be seen by comparing the Estérèls in the Land Survey and in the 'Carte Marine des Côtes de France.'

Mieulet's large map of the chain of Mt. Blanc (1:40000) must be reckoned among the Government maps. It has been frequently referred to in these pages. It ranks with the best maps yet produced for accuracy and beauty of execution.

Switzerland is preeminently the country of maps. At the head of its productions in this department stands the magnificent series of maps produced by the Federal Staff, under General Dufour, and hence known abroad as the Dufour-Karte, described by the late Dr. Petermann, of Gotha, a most competent critic, as 'das vorzüglichste Kartenwerk der Welt.'

The Federal Map, $\frac{1}{100000}$, was only a reduction from the original

drawings of the Staff. For many years these drawings were not reproduced. Some of them, however, the Swiss Alpine Club obtained leave to publish at their own cost. These sheets are popularly known as the 'Swiss Alpine Club Map of Canton Valais.' Other sheets were availed of in Herr Ziegler's fine maps of the Engadine.

The whole original Survey is now, however, in course of publication, the lowlands on the original scale of 1:50,000, the mountain districts on the scale of 1:100,000, with corrections up to date. In making these corrections the Swiss Club and the Federal Staff co-operate to some extent, and the 'Excursions-Gebiet' of the Club has been sometimes chosen with reference to the progress of the work. The mountain maps are placed, as published, in our Club map cupboard. The ground is laid down with contour lines, showing every difference of elevation of 10 mètres; water and glaciers are coloured blue, and woods are also indicated. The number of local names given is of value to the philologist, who, having compared the Alphubel of the Saasthal with the Hubel Alp of the Lauterbrunnen Valley, can wonder complacently at the phantasies of Arabic Professors.

These two maps, together with a third, reduced to the scale of 1:200,000, and published in four sheets, constitute the Dufour-Karte.

To cross the Swiss frontier into regions comprised in the Austrian or old Italian Surveys is a serious matter to the mountaineer who prefers his map to local guides. The old map of Piedmont in ninety-one sheets is on a large scale, 1:50,000, and in its way a fine work, in the lower regions. But beyond paths it is a work of imagination, almost useless to the mountaineer. Of late years a few superficial corrections have been introduced. But it will, before long, be superseded by the new Survey of Italy, the results of which are to be given to the public, in the first place, in a comparatively rough style of engraving, on a scale of 1:100,000. None of the Alpine sheets have yet been published, but if I may judge by those of the Abruzzi before me, the hillwork of the engineers has been thorough.

The new Austrian Map, 1:50,000, has been already criticised in the 'Journal' (vol. vii. p. 277). Time and exploration have shown that the criticisms there made on one sheet apply to many. The Primiero group is probably the worst portion of the whole Survey. The delineation of the ground, the basis of every map, is however as a rule fairly correct. In the nomenclature and attribution of heights the authors have gone most wildly astray. But these errors are not irremediable, and in some sheets we believe they will shortly be remedied. Any suggestions which English mountaineers are disposed to make may be communicated to the Military Institute of Vienna, through Herr Meurer (Bäckerstrasse, No. 6, Vienna), the President of the New Austrian Alpine Club.

The old map of Tyrol, (1:40,000), in some portions superior to its successor, and the Lombardo-Venetian Map (1:80,000), which shares the failings and merits of the Piedmontese, but, having to do with but little snow and ice suffers less from the failings, are also to be found in the map cupboard.

The old (1856) map of Bavaria, (1:100,000), is now in process of su-

persuasion by a new map on the 50000 scale, which ought to incite some of our members this year to combine with the Passion Play some exploration of this, to us, little known district.

There are, of course, many other maps in the drawers, the result of the labours of individuals or of Alpine Societies. But want of space for the present confines me to the Government Surveys.

D. W. FRESHFIELD.

ZERMATT AND THE WEISSTHOR IN 1840.—Mr. Malkin sends the following note:—‘Another and earlier contribution (see ‘Alpine Journal,’ vol. ix. p. 174) to the early history of the Weisssthor may be acceptable.

‘In 1840 I made the circuit of Monte Rosa by the St. Théodule and the Moro, returning to pick up my wife at Geneva. Attention had been directed to Zermatt by the visit of a party of Genevese notables in 1839. I found M. Marcet of Geneva and Mr. and Mrs. Edward Romilly about to start on an adventurous expedition into that unknown region, and we at once settled to join them. The afternoon being very warm, the passage of the glacier torrents above St. Nicolas was really difficult for the horses, as Mrs. Marshall Hall has described, though quite easy in going down the valley in the morning. My friends’ programme only included what their predecessors had done—the Riffelberg and the Schwartzsee—which being successfully accomplished, I became bail for their safe ascent of the St. Théodule, and I may mention that the ladies rode most of the way over the ice, and the horses were taken up to the top. This is the first recorded lady’s ascent.* In these two visits I questioned Damatter about the passes. The Col d’Erin, he said, was long, not difficult, had been crossed by natives going to Sion. There was a more difficult passage to Saas—of 10 hours—the col not specified: the Saasgrat was quite unknown to tourists at that time. Towards Zinal or Turtman there was no way: he had looked in vain. There was a passage to Macugnaga, long and difficult. Both he and Brantschwein professed to have crossed it, the latter with a traveller. This certainly was not the old Weisssthor.

‘In 1843, moved by Forbes’ book and the recollections of 1840, I made a long round from Chamonix, by the Col de Bonhomme, Tarentaise, Col de la Galèse, and Val Savaranche, to Aosta, having arranged with Forbes’s Savoyard, Victor Tairraz, then young and unknown, to meet me there. One object was to solve the problem of the pass to Macugnaga. We crossed (this being the second passage by travellers) the Col de Collon and Col d’Erin, and finally, after passing the night in the village of Findelen, with Damatter as local guide, ascended the (true) right side of the glacier till we reached the upper snow fields, and ultimately the ridge dividing the Findelen from—something?—close to a black point of no particular importance, which must have been the butt-end of the Strahlhorn. Here comes a puzzle about Damatter which I never have solved. He pointed the way to Macugnaga as round the corner of that rock. I had not time to go down; if I had, I should have landed, not at Macugnaga, but at the Mattmark See. That

* For an interesting account of the first passage of the St. Théodule by Englishmen, see *A. J.* vii. 435.

became quite plain to me in crossing the true Weissthorn to Saas in 1864. The Saasgrat in 1843 was quite unexplored; there was no decent map of the country, and I might be excused for a very imperfect understanding of the geography. But whether Damatter lied, or whether he lost his bearings in a cloudless day, or what else, I cannot say: certain I am he never got down to Macugnaga that way. It was not to shirk work, for we were as high as the real pass, and must afterwards have gone very near it. My notes say: "We followed the precipice towards Monte Rosa, crested with an overhanging drift of snow 25 to 30 ft. high. About the middle a bare black rock topped with an enormous billow of snow curling over us ready to break on Macugnaga, to the height of 80 to 100 ft., indescribably singular and grand." The rock no doubt was the lower part of the Cima di Jazzi—then hardly known by name—and the snow wreath will call to mind, and may be identical with, the ticklish position in which Mr. Hinchliff found himself when lost in the mist a dozen years later. We crossed the snow fields, and descended the Gorner glacier to the now well-known path leading up to the Riffel, and so to Zermatt.

'Damatter, though not to be named with the guides of to-day, was a genial good fellow. But he failed entirely to enlighten me as to the pass to Macugnaga, seeing that the left bank of the Schwartzberg glacier would have landed me at Saas with more or less of inconvenient rapidity.'

ALPINE MEETING AT THE LAKES.—A most interesting meeting of members of the Alpine Club was held at the Portinacale Hotel, near Keswick, on Saturday, April 3, when about thirty members and friends sat down to dinner. The President, Mr. C. E. Mathews, in the chair.

On the evening of April 2, thirteen of the party met at Wastdale Head, and on the following morning ascended by the Pillar Mountain to the Pillar Rock. The party descended into Ennerdale, and made their way by Scarf Gap to Buttermere, and thence to Keswick.

On Sunday, April 4, a party over twenty in number started from Portinscale to the head of Borrowdale, and leaving the carriages at the farmhouse above Seatoller, climbed Scafell Pike by a very interesting chimney or 'couloir,' which, being filled with snow and ice, gave unexpected satisfaction.

There is a very remarkable natural arch in this couloir, which Mr. Cust claims to have been the first to discover, and he was therefore entrusted with the guidance of the party. A great deal of fresh snow was found between the top of the chimney and the summit of the mountain, where a halt was called for luncheon.

The party then made for Mickledore, which was found with some difficulty, in consequence of the driving mists; and having crossed the 'Mauvais Pas' on to Scafell, they returned over Scafell Pike to Seatoller, by way of Seathwaite, having spent a most enjoyable day.

The best thanks of the Club are due to Mr. Horace Walker, Mr. Gardiner, and Mr. Hulton, for their admirable organisation of these very delightful spring expeditions.

MARITIME ALPS.—By the courtesy of the Italian staff I am enabled

to give their figures for the peaks for which (vol. ix. p. 410) I could only furnish approximate estimates. The Cima della Nasta, in place of 3,090 mètres, is 3,108; the C. della Culatta, which will be called Cima del Baus on the new map, is 3,068 mètres in place of 3,080; the Cima (Testa) della Rovina, 2,975, instead of 2,985 mètres.

D. W. FRESHFIELD.

DEATH OF CHRISTIAN MICHEL.—Christian Michel, who was for many years well known as one of the leading Grindelwald guides, died in June last, in his 64th year. He had been for some years past active work.

ALPINE ACCIDENTS. Since 1865 no Alpine season has opened so disastrously as that of 1880. We have already to regret the loss of two valuable guides and possibly permanent injury to a third, besides the death of two foreign travellers.

Peter Rubi and F. Roth have perished, with a Swiss traveller, Dr. A. Haller, in crossing the Lauteraar Joch. It is evident from a letter from Mr. P. Thomas, A. C., published in the 'Times,' that the party met their fate by the giving-way of the snow-arch over the 'bergschlund' on the Lauteraar Glacier side of the pass. Inäbnit has received severe injury from a fall caused by the giving way of an ice cornice or hanging sérac on the Jungfrau. The accident apparently happened on the ordinary route at the moment the party were reaching the Roththal Sattel from the Aletsch Glacier. Such at least is our reading of the confused account forwarded by the 'Times' correspondent at Geneva, which is a fair specimen of the communications which render the Swiss 'intelligence' of that journal a byeword among mountaineers. Rubi's worn honest face was familiar to many of us, and all the three men were of good standing.

A German traveller, Herr Welter, of Cologne, has perished by falling into a crevasse on a glacier near Taufers in Tyrol.

Subscriptions for the widows and young families left by Rubi and Roth are received by Herr G. Strasser, Pfarrer in Grindelwald, and J. W. Hartley, A. C. Letrualt, Shandon, Dumbartonshire.

NOTICES.

JAHRBUCH DES SCHWEIZER ALPENKLUB, 1879-80.—The present volume begins with a good list of expeditions in the 'Club Gebiet,' or special district chosen for exploration, and is accompanied by a transcript of the portion of the 1:50000 Federal map dealing with the Bernina group. Unfortunately—we only echo the regret of one of the Swiss writers—no attempt has been made to carry on the survey of the Italian side of the chain, a task which would be worthy the skill and enterprise of a foreign Reilly.

Several papers—the most important, by Dr. Güssfeldt, deals with an expedition we have already recorded—are devoted to the now well-known central mass, or the peaks near the Bernina Hospiz. Then, as was to be expected, the scene is transferred to the hitherto by Swiss

climbers little visited range which rises above Val Bregaglia. Here an almost complete change in nomenclature has to be noted. English climbers in general (and I myself in particular) have been wont to call these mountains by the names given them in the old Dufour map. That famous authority has been in few places overthrown. But over these peaks our good Homer seems to have nodded; at any rate, his conclusions have been reversed and altered in every direction by the supervisors of the new 1:50000 map. We note only the more important changes. The highest peak of the group (first ascended by D. W. Freshfield and C. C. Tucker) takes, in place of Cima del Largo, the name of Cima di Castello; our Punta Trubinesca (also first ascended by D. W. F. and C. C. T.) becomes the Piz Cengalo; the Cima del Tschingel is now Piz Badile; the Cima del Rosso of the old map has no name (both these peaks were first ascended by Mr. Coolidge). As the map does not deal with the Italian side, the error in the old Swiss maps as to the position of the ridge dividing the Alpe di Ferro from the Porcellizza Alp is not noted, and consequently some confusion remains as to the position of the passes at the head of the Bondasca, a confusion which (unless all other indications mislead) is added to by the substitution of A. di Ferro for Porcellizza Alp in Signor Ganzoni's paper.

But enough of topography. The liveliest of the Club-district papers comes from Greifswald, on the Baltic shores, and is by Dr. Minnigerode, who describes his severe climb to the summit of the Badile, his ascent of the Cengalo, and his crossing of the Passo di Bondo, which he, like his predecessors, found very hard to find. I have still a very lively remembrance of an icewall, below one of the gaps Dr. M. rightly passed by on his way to the true col.

Herr Imfeld writes on the Evolena district. His most important contribution, however, is an admirable panorama from Monte Rosa, a work of great labour. He will pardon me for suggesting that to render the nomenclature complete, he should go over again some of the more distant groups, particularly the S. W. Alps, where the Grivola is left out, the Mont Blanc group, where there are one or two obvious errors in the identifications, and the Adamello group, where several identifications may be added.

The veteran Herr G. Studer has gathered together all the traditions of an old pass over the Vieschergrat, and has satisfied himself that the balance of evidence is in favour of such a pass having been in frequent use up to the latter half of the XVIth century. It is with the greatest deference, but without hesitation, that I am obliged to hold to the contrary opinion. I have not now the space, nor the authorities at hand, to meet Herr Studer's argument as it deserves. But I may briefly suggest that I should rely *first* on the evidence that there was no such enormous wasting of the ice at the period in question as would have been necessary to render a pass over the Vieschergrat preferable as a route to the (in time) inconsiderable circuit by the Grimsel; *secondly*, on the fact that authors contemporary with the supposed pass, who give detailed catalogues of the Valais passes, make no mention of any practicable route over the Vieschergrat. Strangely enough,

to none of these authors does Herr Studer refer. I can only now cite Stumpf (1546) the well-known Simler (1574), and Sebastian Munster (1543). North of the Valais, the passes mentioned are the Grimsel, the Gemmi, the Sanetsch, and the Lotschenberg, which was perilous. In Simler, the Vieschgletscher is mentioned, but no pass. Rebmann (1605) and Ægidius Tschudi (about 1540) may be looked to for general evidence as to the extent of the glaciers during that period.

The 'Jahrbuch' contains many other articles of general interest, of which I can only give the names. A. Wäber, 'Aus dem Aversthal;' Dr. P. Güssfeldt, 'Zermatter Berge im Jahr 1879;' E. von Fellenberg, 'Geologische Wanderungen im Rhonegebiet;' F. Schweizer, 'Der Pelvoux und Die Barre des Ecrins;' O. V. Pfister, 'Neue Streifzüge im Montafun;' Meyer von Knonau, 'Historische Mittheilungen über das Clubgebiet;' and Held, 'Die Schweizerische Landestopographie unter der Leitung von Oberst H. Siegfried.' It concludes with the usual short notices, reviews and proceedings.

D. W. F.

PROCEEDINGS OF THE ALPINE CLUB.

May 4, 1880. Mr. C. E. MATHEWS, *President, in the chair.*

Mr. H. Seymour King was elected a member of the Club.

Mr. F. J. CULLINAN read the paper on 'An Ascent of the Aiguille du Talèfre,' printed in the present number.

Commander E. D. LAW exhibited some specimens of waterproof maps, printed on various substances, and suggested their applicability to Alpine travelling.

Some of these maps were presented to the Club, and can be seen in the rooms.

In the discussion that followed Messrs. DENT, FRESHFIELD, JACKSON, BARLOW, HEATHCOTE, MILLINK, and MATHEWS took part. The general opinion expressed was that the maps would be likely to prove both practical and useful.

June 1, 1880. Mr. C. E. MATHEWS, *President, in the chair.*

Mr. Alfred PARSONS was elected a member of the Club.

The Hon. SEC. read Mr. F. Gardiner's paper on 'Three New Ascents without Guides in Southern Dauphiné.' The paper was illustrated by an excellent map, the work of Mr. C. Pilkington.

June 15, 1880. The Summer Dinner took place at the Ship Hotel, Greenwich. Sixty-five members and guests sat down.

A new Catalogue of the Library is in preparation, and will shortly be printed. For convenience of binding it will be uniform in size with the 'Alpine Journal.' The price of the Catalogue will be one shilling. Members desirous of possessing copies are requested to inform the Hon. Secretary or the Hon. Librarian, Mr. C. C. Tucker, at their earliest convenience.

A spirited black and white drawing, entitled 'Jack Frost,' has been presented to the Club by Mr. E. P. Jackson; and a clever water-colour drawing of the Matterhorn by Mr. E. T. Compton.

THE
ALPINE JOURNAL.

NOVEMBER 1880.

EXPEDITIONS AMONG THE GREAT ANDES OF ECUADOR.

THE following notes have been received from Mr. Whymper on the expeditions made by him in the Andes of Ecuador during 1879-80. We understand that of the 212 days which his party passed in the interior of the country, there were only four at which they found themselves under 6,000 feet above the level of the sea. Thirty-six nights were passed at elevations over 14,000 feet. The altitudes quoted throughout will be liable to correction on being re-computed.

Nov. 3-24, 1879. *From Southampton to Colon, on board the 'Don.'*—Arrived just after the Panama Railway was blocked and partially washed away by extraordinarily heavy rains, and was detained nine days at Colon in consequence.

Dec. 4. *Colon to Panama by the railway.*—Transit occupied 13½ hrs.

„ 5-9. *Panama to Guayaquil on board the 'Payta.'*

„ 9-12. *At Guayaquil, completing preparations for the journey into the interior.*—Engaged Mr. Perring as interpreter.

„ 13. *From Guayaquil up the R. Guayas to Bodegas, on board the river-steamer 'Quito.'*

„ 14. *From Bodegas to the village of La Mona with a train of mules.*—At Bodegas travelling by water ceased, and thenceforward was on foot or on mule or horseback, until the return to Yaguachi on July 12, 1880.

„ 15. *La Mona to the village of Muñapamba.*—On the latter part of this day the low-lying land on the Pacific slope of Ecuador began to be quitted. The village of Muñapamba is about 1,250 feet above the level of the sea.

Dec. 16. Muñapamba to tambo Loma.—A 'tambo' is supposed to be an inn. This particular one could not afford either food or firing, bed or bedding. It was not at this time considered a first-class establishment by the party, but subsequent experience caused a different opinion to be entertained. Height of tambo Loma is about 6,830 feet.

„ 17. *Tambo Loma to Guaranda.*—Upon leaving the inn, the ascent was continuous and very steep, until the outer range of the Andes was crossed at about 10,365 feet, whence a descent was made on S. José de Chimbo (8,176), and a subsequent ascent to Guaranda (8,870). The route thus far followed was called a 'road.' So far, however, as a few miles to the west of the summit of the outer range, it was only a track, or a series of tracks, made by men and beasts. For a few miles on the western side of the pass, and from the summit down to S. José de Chimbo, the route was over a good *made* road, which a very little additional labour would convert into a road fit for wheeled vehicles. On the rest of the route mud was generally one foot, and was frequently two or more feet deep.

„ 18. *At Guaranda.*—Hired a house, and decided to make this a base for attack on Chimborazo.

„ 19. *From Guaranda to the 'Arenal' (sandy plain) on the south of Chimborazo, and back to Guaranda.*—The route from Guayaquil to Quito, *viâ* Bodegas, passes to the south and afterwards to the east of Chimborazo, going over, at its highest point, a locality which is called the *Arenal grande* (to distinguish it from the lesser *arenales*, which are numerous in the country), the summit of which is, roughly, 14,000 feet above the level of the sea. This route has been in use since the time of the Spanish conquest, and is still by far the best way of arriving at Quito from the coast. A second route has been opened in recent years, *viâ* Riobamba, Guamate, and the Bridge of Chimbo (whence a railway leads to Yaguachi, upon a branch of the R. Guayas). In returning, Mr. Whympers's party followed this route, and found it to be in all respects worse than the old and well-established way between Guayaquil and Quito.

The object of this day's journey was the close inspection of the route which had been previously

determined upon for an ascent of Chimborazo. The *reconnaissance* was satisfactory, though the mountain was cloudy, and the party returned to Guaranda; but, whilst going back, Mr. Whympers was severely affected by the diminished barometric pressure, and had to be supported for a large part of the way. The excursion occupied eighteen hours.

Dec. 20-21. At Guaranda.—On the 21st Chimborazo was seen more clearly than hitherto, though it was not free from clouds at any portion of the day. For the first time, it was clear enough to render it possible to trace a route over the upper part of the mountain, and to sketch it. Indicated to the Carrels the direction which seemed most promising, and started them off at 2 P.M. to inspect the proposed line of ascent, and if possible to select a camping-place. Mr. Whympers remained at Guaranda completing preparations.

„ 22-25. *At Guaranda.*—The Carrels did not return until 8.45 A.M. on the 23rd, and came back much fatigued. They had followed the route taken on the 19th as far as the summit of the *arenal grande*, and had then made directly towards the mountain. They had selected a camping-place at a height (so it appeared by an aneroid which had been lent to them) of over 16,000 feet, and said that it would be very fatiguing to get there, as the soil was sandy, and so soft as to allow one to sink in knee-deep.

Preparations were completed on the 23rd, but the muleteers would not be away from Guaranda on Christmas day, and so a start was delayed until the 26th.

„ 26. *From Guaranda to First Camp on Chimborazo.*—Left with the two Carrels, Mr. Perring, two Indians as porters, three arrieros, and fourteen mules. Started at 9.45 A.M., got to the summit of the *arenal grande* at 4.45 P.M., and encamped at 5.50 P.M., a little below the summit of the *arenal*. Minimum temperature in night, 21° Fahr.

„ 27. *From the First to the Second Camp on Chimborazo.*—The two Indians deserted during the night, and five mules also disappeared. The carrying power being thus reduced, it was necessary to make two journeys from the first camp to the place selected by the Carrels. Started off J. A. Carrel at 10 A.M. with

three natives and eight mules. Carrel remained above to commence preparation of camping-place, and the others returned to the lower station about 1 P.M. Left twelve packages of provision, etc., in dépôt below, and started upwards with the whole of the caravan at 3.20 P.M., arriving at the second camp at 4.45. Brought up four mule-loads of wood. Sent back the whole of the mules and natives, and encamped with the two Carrels and Mr. Perring. Shortly after arrival all the party except Perring had frightful headaches, and felt much exhausted (although all had ridden up the entire distance from Guaranda), and retired to bed early, feeling incapable of making the least exertion. The height of the second camp was 16,600 feet. Minimum temperature in night was again 21° Fahr.

- Dec.* 28. Three inches of new snow around the tent in the morning. All except Perring completely incapable, and lying panting in the tent. Found that much of the tinned meat had gone bad, and had it thrown away down the mountain side.
- „ 29. The Carrels were somewhat better, and were eager to be off exploring. Sent them away at 7.50 A.M. to continue the ascent of the ridge on which the camp was placed, instructing them not to try to go to any great height, and to look out for another and higher camping-place. They returned at 6.30 P.M., quite exhausted, having made a push towards the summit and reached a height of nearly 19,000 feet.
- „ 30. *At the Second Camp.*—Both Carrels *hors de combat*, lying down in the tent most of the day. Eyes of both badly inflamed, especially J. A. Carrel's. Louis becoming better towards midday, sent him with Perring to fetch up the second tent from the first camp. They returned just at nightfall, having found it as much as they could manage to carry. Minimum temperature in night 20°·5 Fahr.
- „ 31. At 11.45 A.M., as it was evident that the camp was not high enough, we started to select a higher position. Found one at about 17,400 feet above the sea, and returned to second camp. At 3.15 P.M. heard from an arriero (who was retained as a courier to go backwards and forwards between Chimborazo and Guaranda) that some of the boxes at the dépôt at the first camp had been broken open and robbed.

Sent Perring down with the arriero, with a letter to the authorities at Guaranda, asking for a guard for the baggage. Three Indians had been sent up to replace those who had deserted, and these were despatched with the Carrels, carrying light loads, up to the place which had been selected for third camp. By nightfall they returned to the second camp.

Jan. 1, 1880.—The Carrels continued to move things up to the third camp, and as the stock of firing was running low, Mr. Whympers went down with the three Indians to the first camp to collect more wood, and to inspect the boxes which had been robbed. Despatched the Indians upwards with loads of wood, but all three deserted, and were not again seen. In the afternoon returned to the second camp. Terrific wind in the night, blowing in squalls. This was the first occasion upon which inconvenience was experienced from high wind.

„ 2. The Carrels went off at an early hour with more things to the third camp. Perring returned at 10 A.M. with a new arriero and an Indian lad, and two soldiers out of four who had been sent to guard the baggage. It appeared that Perring suspected that the late arriero was the thief, and had had him arrested and sent to Guaranda. With the help of the new men we got the whole of the necessaries up to the third camp by night, leaving, however, one tent and the bulk of the stores at the second camp.

„ 3. Started at 5.35 A.M. to try to ascend Chimborazo. At that time there was no wind, and we mounted for a thousand feet without any great difficulty, excepting such as arose from shortness of breath. Soon after 7 wind began to spring up, and at 7.30 it blew so hard as to render further progress highly dangerous. It was certain that we could not reach the summit on that day, and we returned to camp.

„ 4. *Ascent of Chimborazo.*—Started with the two Carrels at 5.40 A.M. on a very fine and nearly cloudless morning, leaving Perring in charge of the camp. Followed the track made yesterday, and profited by the steps which had been then cut. At first the line of ascent was on the southern side of the mountain, but after the height of 18,500 feet had been attained, we commenced to bear round to the west,

and mounted spirally, arriving on the plateau at the summit from the north.

The ascent was mainly over snow, and entirely so after 19,000 feet had been passed. Up to nearly 20,000 feet it was in good condition, and we sank in but slightly, and progressed at a reasonable rate. At 11 A.M. we were nearly 20,000 feet high, and up to that time had experienced fine weather, with a good deal of sunshine.

The sky now became clouded all over, the wind rose, and we entered upon a large tract of exceedingly soft snow, which could not be traversed in the ordinary way, and it was found necessary to flog every yard of it down and then to crawl over it on all fours. The ascent of the last 1,000 feet occupied more than five hours, and it was 5 P.M. before we reached the summit of the higher of the two domes of Chimborazo (21,424 feet).

On the immediate summit the snow was not so extremely soft, and it was possible to stand up upon it. The wind, however, was furious, and the temperature fell to 21° Fahr. We remained only long enough to read the barometers, and left at 5.20 P.M.; by great exertions succeeding in crossing the most difficult rocks which had to be passed over just as the last gleam of daylight disappeared; but we were then benighted, and took more than two hours in descending the last 1,000 feet—arriving at the camp about 9 p.m.

- Jan. 5. *At the Third Camp.*—Wrote letters to Quito, Guayaquil, etc., and despatched them by courier to Guaranda.—Occupied all day in writing notes and letters. Louis Carrel mentioned that his feet were frost-bitten, but as he did not seem at all unwell, or regard his case as serious, no one was aware until several days later that he had taken great harm. Min. temp. in night 17° Fahr.
- „ 6. *Ascended again to about 18,500 feet to photograph and collect.*—Very bad weather coming on, we had to make a precipitate retreat, and abandon temporarily the instruments which had been brought up. On return to camp despatched the others to the second camp to bring up necessaries. During their absence a tremendous thunderstorm raged immediately round about our ridge. Thunder and lightning

occurred round about our camps on all the days that we were on the mountain.

- Jan. 7. *Went up and recovered the things which were abandoned yesterday.*—Wished the Carrels to continue upwards to explore for another ascent, but they refused to do so, or to continue at the third camp. In course of discussion it came out that the feet of Louis were badly frost-bitten and that this was one reason for declining to make another ascent. Sent Perring down to Guaranda to bring men and mules for the retreat. As yesterday, the weather became very bad before midday, and outdoor work was rendered impossible.
- „ 8. *Commenced carrying things down, and by night had got all down to the second camp.*
- „ 9. *At Second Camp.*—As no men or mules arrived, the retreat could not be continued. Louis Carrel could scarcely put his feet to the ground, and remained in camp all day. J. A. Carrel assisted in collecting, and in glacier measurement, etc. At 11 A.M. temperature in the tent was 72°·5 Fahr.
- „ 10. *At Second Camp.*—Perring arrived with mules at 9.30 A.M., and by 11.10 all were laden and started off for the tambo of Chuquipoquio, on the eastern side of Chimborazo, which was the nearest place where Louis Carrel could be put to bed or receive any attention. Mr. Whympfer remained behind alone, as his work was not completed, and in the course of the day ascended again to the third camp, returning, however, by night to the lower station.
- „ 11. *At Second Camp.*—At 7 A.M. this morning the temperature was eleven degrees below freezing point in the tent. Went up to the third camp again to get angles, but only got three in two hours, and came down in despair. At the latter part of day Perring arrived with five mules. As the work was still unfinished, the beasts had to be sent away again, Perring remaining behind.
- „ 12. *From the Second Camp on Chimborazo to the tambo of Chuquipoquio.*—Waited at the camp until 4 P.M. completing collections, etc., and then left to rejoin the others. Arrived at the tambo at 10.45 P.M., and found Louis Carrel's feet much worse. Nearly all the toes were black, and the feet were swollen. No doctor or medicines could be procured at any place

nearer than the town of Ambato, twenty-four miles distant, and it was decided to move to that place directly it was possible. More than three weeks elapsed before he was able to walk, and more than five weeks before he made another ascent. We thus lost an entire month in the finest part of our season.

(*To be continued.*)

WANDERINGS IN TICINO. By A. CUST.

1. *Val Maggia.*

WHY are the charms of Locarno undiscovered? Why are the marble halls of its Grand Hôtel comparatively empty? The place has obvious defects; the inn garden is still new and shadeless, and does not reach to the lake-shore; the railway station is a good deal too prominent in the view. Mr. Freshfield suggests that the neighbouring delta of the Maggia frightens tourists, but he tells me that he has never heard of any illness arising from its exhalations.

Travellers deprive themselves of a great deal by their neglect. Locarno is a centre for some of the most sublime and exquisite valley scenery in the Alps, and much of this scenery can be enjoyed in a comfortable barouche.*

It is certainly curious that Val Maggia should, despite the praises of the most popular guide-books, be still an unfrequented valley. 'Out of 30,000 travellers passing from Locarno to Airolo,' says the Swiss Alpine Club '*Itinéraire*,' 'there is

* Here is a list of the drives:—

1. To the villages behind the town and to the brow above the entrance of Val Verzasca on the west, walking on to the point where the old path up the valley is cut in the cliffs. (A few hours.)
2. Up the Val Verzasca to Brione and back. (A day.)
3. To Bignasco and Fusio in Val Maggia. (A day and a-half, sleeping at Fusio, and spending the second day at Bignasco.)
4. Up the Val Onsernone. (A day.)
5. Along the lake to Cannobbio and up Val Cannobbina to Santa Maria Maggiore, sleeping there, and walking or riding back down the Centovalli to Intragna. (Two days.)

The time to see Locarno is on the occasion of the great annual fair in the middle of October, when the piazza is alive with booths, and with the dresses and figures of the natives of the neighbouring valleys.

In the last edition of Murray (1879) this district will be found carefully and accurately worked up.



VAL DAVONA
FROM THE CAPPELLA DI MONTE

scarcely one who cares to quit the great highroad in order to traverse the Val Maggia, and yet this valley lies almost in a direct line connecting Airolo with Locarno.' The valley is traversed by an excellent road, and, by driving to Fusio, Airolo can easily be reached from Locarno in a day.* I need not repeat a general description of the valley: it is enough to refer to 'Italian Alps' and the 'Alpine Guide.'† One of the most characteristic spots in it is its opening at the Ponte Brolla, three miles above Locarno. Here the water, itself of the most lovely tint and purity, has deeply grooved and marvellously polished the hard gneiss strata which are tilted up at a steep angle along its bed. The rocks that go down to bathe like rugged and ugly sweeps come out fair and smooth as children. Their great black slabs gradually tone down to lighter tints of grey as they near the water, till at last, half in and half out, they shine cream or fawn-coloured, polished and rounded as if the stream had penetrated down to an underlying stratum of marble such as Carrara might envy.

Half-way to Bignasco stands the pleasant village of Maggia, situated in the broad open valley, near the only bridge over the river below Cevio. The stream is here confined within prettily wooded banks with smiling fields on either side, an agreeable contrast to the usual aspect of its bed.

Chance led me to make the discovery in this characteristic village of an inn, where the traveller who can accommodate himself to country ways will find comfortable headquarters. I promise him, however, no more than a clean bed, a quiet and pleasant sitting-room, and good wine. On the occasion of my first visit to the valley in 1878, I had taken the early boat from Stresa, and reached Locarno in ample time for the walk of some 6 hrs. (18 miles) to Bignasco. Hungry with my walk, I scanned in vain the houses in search of a place of refreshment, and my last hopes centered on a large light-coloured house at the far end of the village, which had caught my eye as I approached. It was signless, but a glance through the windows turned my steps to the door. 'Sit down,' said the landlord in the best of English. It is, as has been pointed out, one of the surprises of Canton Ticino that one finds English spoken in regions unknown to our much travelling

* By the Sasso Pass. Two post carriages ply either way daily between Locarno and Bignasco, one between Bignasco and Fusio.

† It is when one stumbles across an excellent description written years ago of a district like this still secluded as ever, that one most realises the intrinsic worth of Mr. Ball's work.

race. A large emigration stream to Australia and California is fed by these valleys, but the emigrant natives love to return and end their days where they began them. My host, Anacleto Garzoli, had built his substantial *albergo* with the proceeds of fourteen years of Californian expatriation. 'Good wine,' says the proverb, 'needs no bush;' and none who pass this way, if my advice is worth anything, will neglect to try Garzoli's 'Grignolino,' a wine on which he especially plumes himself, made at home, but from selected grapes brought from Italy.

After inspecting the inn, I promised to return for a less hurried visit another time. The following year accordingly saw me installed for some eight days in undisputed possession of the upstairs parlour. Garzoli not only speaks English well, but is of that North Italian type of character which resembles or, at any rate, assimilates readily with the English; quiet, sturdy, self-possessed, and to be depended on. He is more intelligent and business-like than the ordinary valley folk I met; and I noticed that he was distinguished by invariably keeping his head amid potations, which I found of a somewhat Icelandic character. He had built his house contemporaneously with the erection of the Grand Hôtel at Locarno, and it struck him that while both might fail as speculations, as being above the requirements of the respective places concerned, he at least, unlike the proprietors of the latter, could console himself that he was raising a comfortable roof over his own head. The absence of 'bush,' though common enough I fancy in these parts, was in this case intentional. If customers came for whom he did not care, he could tell them it was his private house and turn them out. 'You see, sir,' he said, 'in a place like this we can have nothing to offer on the sudden, and if people whom I do not know come calling for this and that, I tell them, this is not the place for them, they must go elsewhere.' The natives have a passion for building themselves comfortable houses, and I so sank in the esteem of a leading inhabitant of the village when he learnt that I was not myself a householder, that he muttered, being in his cups at the time, 'a man who has not a house is nothing.'

Behind the village lies a labyrinth of vineyards, out of which emerges a main track ascending to a chapel on the brow above. Up to this Garzoli brought me one day to 'show me a sight such as I had never seen in my life before.' It was a shoot of the torrent in the gorge hard by, which is called *Salto* in consequence. The stream leaps at a bound deep down into a sort of tunnel which it has scooped for itself in the rocks, from which, after a temporary burial, it emerges in the waterfall

seen from below. The roar and hubbub of the boiling waters when the stream is flooded may readily be conceived to be tremendous. The chapel is the meeting place of all the paths leading out of the valley on this side. One of these follows up the side valley to the Passo d'Eva at its head, leading to Brione;* that to the right ascends to the Alp and Cima d'Ajarlo. The latter offers a pleasant and easy ascent and a fine view of the lake and the valley. The walk may be extended to the ridge overlooking the Verzasca.

On the opposite side of the valley is the village of Moghegno, a very Pompeii of quaint little paved streets and squares and arches, all compressed tight together into the most compact space possible. A path finds its way out of it, ascending pleasantly through the chestnut woods on the hill side to the châteaux above. At one spot, where several paths diverge, is a romantic peasants' halting place, with rough stone seats set under the trees in a pretty open glade. The châteaux are at a considerable elevation on the ridge of the hill, and are highly characteristic. A corner is turned and you find yourself on a little level plateau of turf among a snug group of stone houses so thickly shaded by trees that you forget all about the valley you have left far below. In reality a side valley has been entered, and a path now extends up it on the level at some height above the stream.

I must not omit mention of the village church bells. During my visit the vesper chimes fell on my ear night after night with the same rich intonation to which I had been accustomed in one of the grandest of our English cathedrals.

Garzoli was not in favour of a 'pension' arrangement, arguing that the cost of board would vary from day to day, and his confidence that I should not regret leaving the matter open was justified by the bill, in which I only feared he had not left himself sufficient profit. The natives of these Ticinese valleys are as yet unspoilt and unrapacious, and at the country inns I found cheapness combined with homely comfort, friendliness and attention, and clean and good beds.† But the lordly and

* The landlord of the inn at Brione praised the scenery of this pass. By it and the Val Verzasca an interesting round might be made from Maggia or Locarno. No doubt the ascent of the Madone di Giovo, one of the finest points of view in the neighbourhood, might be made on the way.

† The average was at Garzoli's 4 fr. 25 c. per day, the fare including meat, wine, &c. As meat and butter have to be sent for to Locarno, any person intending to stop a night here should write or telegraph his requirements beforehand. I found the same arrangements preferred at

off-hand ways inseparably associated in foreign minds with British tourists must least of all be assumed in these regions, where, happily for the passing stranger, the tourist and his characteristics are still unknown. There is great independence among these valley folk, and the reception accorded the rare stranger may be gruff in the first instance. But the ice once broken, I invariably met with civility. It was a relief, indeed, for weeks together to feel oneself sure of being treated with the consideration customary between members of the same human race, instead of being invariably recognised on first appearance as one of a class which its own faults, acting on the short-sighted selfishness of its purveyors, have made in too many parts of the Alps the object of patronage, ridicule and rapacity. It is only when moving freely among people who have never framed for themselves the type of a tourist—much less of a British tourist—that one realises how much of the pleasure of travel is lost in regions where the popular mind has formed a permanent conception of the Englishman as an animal born to be fleeced, and therefore, if it resist the shears, however closely applied, to be driven with insult from the door.

As the tourist in Ticino is free to pick flowers without fine, to gaze at waterfalls without fee, to live and travel at the country price or fare, so the mountaineer is delivered from the pestering guides and stupid questions that on the regular round make him sometimes weary of his very ice-axe. The hero of the 'Odyssey' is directed to travel on inland, taking with him an oar 'till another wayfarer meeting him shall say that it is a winnowing fan he has got on his glorious shoulder.'

Del Ponte's inn at Bignasco with a similar result. The bills (for supper, bed, breakfast, and wine) at eight inns give an average of 3 fr. 15 c. I have been informed of glaring exceptions to these prices, but only among the upper classes and some years ago, as in the case of a lawyer who kept the only house of entertainment at Maggia, and of the curé at Brione. A drawback in these valleys is the absence of fresh butter. All the cows being kept on the mountains salt butter only is obtainable. The wine is much better and cheaper than in the north. It is sold at the usual price of 80 c. the litre. *Asti spumante* is charged at Bignasco 1 fr. 20 c. Garzoli professes superiority in the art of wine-making over his neighbours, and his wine was unquestionably good by comparison. He grows more than fifty kinds of grapes. I saw the process of *acqua forte* production, which his wife was superintending. Nothing is more simple. Grapes from the lees are heaped into a close boiler, from which narrow pipes conduct the steam down through a cold water condenser, and there discharge it in slow trickling drops of pure spirit, ready to be bottled straight off.

when he is to sacrifice to the god of the sea. And the mountaineer, when asked whether his ice-axe is intended for digging up roots, may rest assured that he is far enough from the haunts of tourists. In the speculations to which a stranger may give rise, the possibility of travelling for pleasure will rarely be contemplated; he has to account for his appearance in the district, and will most speedily produce content if he can point to some specific aim. A botanical or geological profession will happily suit the mountaineer, covering not only himself, but the strange implement he carries.

At the *châlets* it is the custom to refuse payment. Mr. Gosset informs me that when engaged on the revision of the map and frequently sleeping in *châlets*, it was with difficulty that he at last procured the acceptance of fifty cents. a head for his party. On one occasion, the *padrona* having refused payment, I offered some small coin to her boy on meeting him on the hill side, but he drew up his head with the prettiest pride, as if I was making a pauper of him. It appears that it is an established custom among the country people to give food and lodging gratis, expecting to be in want of the same in turn, and that they extend the hospitality to a stranger as a matter of course; they say to themselves, as Garzoli naively put it, 'He is on his way, and he is only requiring what is necessary, for he must have food and lodging, and he may have use for his money when he gets into the valley.'

The well-to-do inhabitants appear to live a life of social and idle enjoyment, and exhibit the characteristics of valley narrowness and self-engrossment curiously tempered by scraps of ideas and reminiscences imported from the rough and busy scenes of California or Australia. That they entertain no small idea of the comfort of life is testified not only by well built houses and the frequent carriages that rattle through the streets, noisily escorted by all the dogs of the place, but by cellars hiding themselves in shady corners at the hill foot outside the village. Here, in Horatian fashion, under shade of chestnut and laurel, these worthies can wile away a summer's day regaling themselves on wine and the more substantial provisions that are purposely kept ready at hand, seated on snug stone benches, forming a half circle round massive tables of the same material, at their own or neighbour's cellar door.

Stone is like wood here. Of wood for building there is none; stone is everywhere. All is gneiss in the Tessin, whose hills are said to be only the bared roots of the loftiest summits of the Alps of an earlier age. The black, iron-hard masses

split up with facility into sparkling light-grey slabs and bars, or tall and slender vine props. I have even seen stone rails fitted together as though of larch. No use, however, of the stone is more characteristic than in the wonderful staircases which lead up the hill sides. The labour of converting these cattle tracks into a series of steps of great slabs of stone must have been immense. Some of these paths meet in a grand staircase beside the chapel mentioned above, where the slightness of the inclination adds to the impressiveness of a way as straight and wide and regularly built as if it led to an acropolis. Worn by weather and feet, these stone steps are polished and hard as iron. Mountain boots are here as out of place as on the staircase of the Sistine Chapel, and nailed toes are apt to slip off their precarious hold with a crunch. For the natives, shod with soles of stout felt, motion is easy and rapid.

The alps or pastures are curiosities in their way. They resemble clearings in the back-woods, and appear on the ridge corners like tiny patches of green amid the brown woods and rock. They are in fact artificially produced by the *commune*, the chestnut woods being cleared away in likely places for the growth of grass. They often occur high up on the hills on ridge or shoulder, and their buildings are invariably of stone. These pastures are, as may be expected, miserably scanty, and unfortunately nothing is done to increase the resources of the valley by damming up the random spreading river. Grass-cutting is extended to steep slopes of so perilous a nature that at Maggia, as I am told, a man a year on an average is lost by falling down.

The Spanish chestnuts which cover the hill sides are much valued as property, mainly on account of the fruit, which is a staple article of food; the dried leaves are also made use of for litter. It is not easy to believe that these wild forests, which seem to extend as far up the hills as the pine forests of northern valleys, the chestnut flourishing at an unusual height in the deep-cut valleys, are carefully parcelled out among individual proprietors, who have obtained property from the *commune* in a certain number of trees. When a tree dies a new one is planted in its place, and old trees may often be seen pruned down to the main stem, whence spring a crowd of new branches. The varied and picturesque shapes and rich foliage of these trees are a constant source of fresh enjoyment to the rambler.*

* The following particulars, mostly on the authority of Mr. Gosset,

All visitors to the valley agree that its beauty culminates where its two lovely branches, the Val Bavona and Val Lavizzara, meet at Bignasco. A description of this place on my part would be superfluous; it is sufficient to refer the reader to 'Italian Alps.' In my opinion its picturesqueness is at its height where the aristocratic quarter is joined to its plebeian suburb by a footbridge spanning the stream, whose clear waters flow between deep banks overshadowed by wood and rock, with one large arch and one small one, with one end abutting on a cliff along which a path is hewn, and the other opening straight upon the porch of a little chapel.

The natives of the district seem justly proud of the beauty of Bignasco. They flock there from Locarno, and their only wonder is that general tourists do not visit the place. They solve the problem with me—it is not known. One of the richest gentlemen of Locarno, whom I met there, assured me that after travelling all over the world, he had found no spot to surpass Bignasco: and indeed it would be hard to find a more picturesque place in the Alps at least. He eagerly protested that if but the tourists came in sufficient numbers he would guarantee that hotel accommodation sprang up.* It is not as though it were a place difficult of access, like many mountain resorts up to which the tourist crowd toils.

If it had its deserts, Bignasco would be one of the most frequented spots in Europe. That it remains without tourists or a decent inn is not the fault of its English lovers. They cannot be blamed, or praised, for reticence. It is sixteen

an ardent explorer of the district, are from 'Les Alpes du Tessin,' S. A. C. 'Itinéraire' for 1873, containing various information on the district. Chestnuts of ten feet diameter are not unfrequently met with. Firs are rare in the Tessin, the beech forests being immediately succeeded on the upper hills by larches. The *Osmunda regalis* is found attaining a height of five feet. A striking curiosity is the rhododendron or Alpine rose, which not only descends to a level of 350 mètres (near Bignasco), but frequently bears double flowers. The great Laemmergeier eagle (*Gypatus barbatus*) may still be seen on the hills above Maggia, one of its few remaining haunts.

* This gentleman was for putting the cart before the horse; a 'sufficient number' of tourists will never go to a place whose only inn is in many ways repulsive and far below the average of village inns in the worst part of the Alps; moreover, so long as the manager of the Grand Hôtel at Locarno is absolutely ignorant of the excursions up the neighbouring valleys, and there is no notice of them, or tariff of carriage charges hung up in the house, English tourists can hardly be expected to make Locarno a centre. Italians make a mistake in thinking that marble halls are what our countrymen most desire when they travel.

years since Mr. Ball devoted a long section to Val Maggia. In the same year, drawn thither by Mr. Ball, Mr. D. Freshfield proclaimed the extraordinary charms of the spot. Ten years later, in 'Italian Alps,' he reiterated, on the strength of many visits, his praises, which have found an echo in Mr. Gardiner's recent paper; Ball, Tschudi, Bäderer, the last Murray, use their best epithets, but all in vain. A stray artist or fisherman comes for a day, and stops a month; but the travelling stream flows over the St. Gothard and sends no wavelet into the quiet backwater of Val Maggia. The driver of the excellent carriage which carries the guests of the Grand Hôtel de Locarno on their excursions had in September 1879 never been to Bignasco!

The Swiss Club proclaimed Ticino its battlefield for one summer, but produced a scanty literary result. Its writers were probably wise; to do justice to these valleys, according to the Swiss standard of descriptive writing, would have required more adjectives than all the Jahrbücher in the world could contain! Mr. Gosset, however, who, when employed on the revision of the federal map, explored the Ticino valleys in no mere official spirit, describes them in his contributions to the 'Itinéraire,' which anticipated the Swiss campaign, and in which much useful information will be found, with a freshness and ardour surpassed by none.

As for the Italians, they seek coolness not beauty, and pass upwards to the pleasant but unromantic lawns and beech copses of Fusio. The charm of Bignasco is still unbroken; and after past experience I need not fear lest I should break it by what is written here.

The depth of Val Maggia has been pointed out as one of the chief causes of its exceptional charm, there being between the Lago Maggiore and Bignasco a difference of only 778 feet in direct height. Though, however, the luxuriance of the trees reaches its fullest glory at the latter place, the traveller in autumn will find as he ascends the valley progress towards a colder clime delicately marked by the varying stages of the vintage. My own first impressions of the scenery were made under favourable circumstances, and will never fade from my memory. Autumn, now beginning to fall, added touches of its own to the charming entrance of the Val Bavona. Russet and orange hues of indescribable delicacy, beautifully contrasting with the blue of the more distant hills, made themselves felt rather than directly seen among the rich foliage that cloaks its rocky sides from foot to crown, or scrambles in delightful disarray among the massive fragments that strew its hollow.

On the occasion of my first visit I went to Patocchi's, an establishment which had imported into a very cheap valley the prices of a comfortable mountain hotel, without putting itself to unnecessary inconvenience to complete the imitation. The following year, I found on my arrival that Patocchi had closed his house as an inn; but I had determined in any case to try the smaller inn kept by Del Ponte. The accommodation and service here were rough, the smells in the passage unusually trying, and there was often an absence of meat. Being alone, I shared the noisy lower sitting-room with country visitors, attendants, dog and bureau, and contented myself with things as they were. A party, no doubt, who took sufficient trouble and used the upper sitting-room, might do more for themselves. On the whole, however, I got on pretty well. There was often fish, if not the *truites distinguées* of the 'Itinéraire,' always abundance of good wine, bread and beer, and a very cheap bill. I am told, however (by Mr. Freshfield), that the host has already learnt to vary his charges according to his customers, and attempts to overcharge carriage company. One feature of the place was a good-natured and playful little man of mean appearance, who kept prowling and gamboling about in the sitting-room like a contented puppy. The first day he astounded me over my meal by patting me on the head with affectionate interest. Being, as I was told, no less a person than the landlord's brother, and as rich in money as he is deficient in wits, Baptiste, as he is called, must be regarded, I fear, as one of the fixtures of the establishment.

Close by, at the opening of Val Bavona and forming a pleasant suburb to Bignasco, is Caveragno with its comfortable white houses and villas peeping out of ways that are as much vineyards as streets, and a church, approached by a massive and handsome staircase, twelve feet in breadth, protected against too well practised cows by stone pillars.

Adjoining is the parsonage, a substantial house. Along its garden-front three ranges of old boxes have been arranged as bee-hives. The method of distinguishing them chosen by the worthy priest shows cultivation. One shelf is that of the poets; 'Omero, Vergilio, Dante,' are the labels on the boxes. Below are the philosophers, amongst them 'Des Cartesio, Aristotele.' I forget who fill the third shelf. Outside the church are monuments of local worthies, recording their good deeds to the community and its regret at their loss in those happy words which come so naturally and gracefully in Italian and seem impossible in English.

Two short strolls, the first, indeed, only of 100 yards, which

the natives will not fail to recommend, are to the wine-cellars and to the cascade.

The great blocks, as big as London houses, which, having tumbled off the upper cliffs, lie piled one upon another on the edge of the valley bottom, have great spaces and interstices between them. These natural grottoes the native uses as his wine cellar. He chooses the side of the valley which will have shadow in the afternoon, puts a door to one of the caves, leaves a space in front of it, sets up a stone bench and tables under the chestnut-trees, and levels a bowling-ground. More romantic spots than these happy drinking-grounds of the Ticinese peasantry it is impossible to imagine, or a greater contrast than that they offer to our citizens' public. At Bignasco, one ambitious cellarer has built a tower, on the roof of which he can sit and enjoy the cool night breeze from Val Bavona.

The waterfall is formed by the stream flowing from the glen at the back of the Cappella di Monte, and is reached by going straight through the old part of the village. It is a slender shoot of water amongst charming surroundings. It floats off a wide wooded cliff into a flat plot of ground, a highly-cultivated tangle of vines, pumpkins and Indian corn.

A longer walk is to the Cappella di Monte, on a broad brow above the town from which there is one of the finest views of Val Bavona. It would be hard to find a more charming stroll than the paths winding up to it, which may be struck either right or left from the foot bridge. The delicious chestnut scenery characteristic of these valleys is here seen to perfection. The glorious luxuriance of these chestnut-trees is to me an ever-recurring charm. I love their rich massive clusters of bright-green leaves with spiked forms, rendered doubly rich by the shaggy circlets of the fruit-pods that thickly fringe them; their crooked graceful stems, their dark shadows, all a-rustle with fallen leaves. In such a setting is framed the unrivalled vista of the Val Bavona, 800 feet below the chapel, crowned by the heights of the Basodino eight miles away. 'Why,' we ask, 'as we sit on the chapel steps, does this combination of rocks and trees touch our senses with so rare and subtle a pleasure?' It is that 'the bold dark outlines of the granite precipices, hanging over the luxuriant yet untamed loveliness of the valley, appeal to our emotions with the strong power of contrast. The majesty of the central ranges, wedded to the beauty of Italy, excites in us that enthusiasm beyond tranquil admiration which is our tribute to the highest expression of the romantic, whether in art or nature.'*

* 'Italian Alps,' p. 7.

The Cappella di Monte may be the object, but should not be the limit of the Rambler's excursion in this direction. After sketching the view from the chestnut-shaded brow behind the chapel (see frontispiece) he should take the level path which runs into the glen of the little stream of Val Chigniuolasco, which forms below the cascade already referred to. Along its banks there is a picture at every turn, with, for a foreground, a sylvan loveliness like that of the Exmoor Lynns, through which glimpses are gained now backwards of the receding distances of Val Bavona, now upwards through the tangle of beech and birch to mountain-crests still plumed with forest. The unfamiliar richness of the scenery carries our thoughts away from the Alps to some more romantic region, and the poet's description of the vale in *Ida*.

Those who climb upwards by the steep meadow bank to some higher crest will notice another proof of the extraordinary industry of the inhabitants. Up the face of the rocks they build stone staircases. On the grass they not only bank the slopes, but cut, as in a well laid-out garden, little paths running across their face, so that they may carry their burdens from terrace to terrace without fatigue. Such trimness in the heart of nature is at once singular and fascinating.

This glen leads to no pass, a characteristic of many of the side valleys of Ticino. No valleys in the Alps, I believe, are so deeply cut as those of the *Maggia* and the *Verzasca*. Not so the side valleys; these climb into the region of peaks and ridges, and keep so aloof from the main valleys that they are only to be approached by laborious staircases, and sometimes almost conceal their existence from the observer below. This seems to be evidence that the great valleys have been scooped out, by whatever agency, subsequently to the general formation. Mr. Gosset has pointed out to me that the side valley often terminates with a peak in the centre of the ridge at its head where you would expect a pass; hence the paucity of passes between the *Val Verzasca* and the *Leventina*.*

* A typical example is the *V. Nadro*, the only pass from which towards *Brione* is of the most puzzling description, lying over a spot where the ridges connecting four valleys meet.

NOTES ON OLD TRACKS. BY DOUGLAS W. FRESHFIELD.

II. *The Dolomites.*

PRIMIERO.—The road from the Austrian frontier at Pontet below Primiero to Fonzaso on the Val Sugana-Feltre road has at last been seriously taken in hand. Several hundred labourers were hard at work last summer blasting a shelf wide enough for carriages through the gorge of the Cismone. The new road will not be ready for traffic throughout before 1882, but there seems every prospect that the upper portion from Pontet to the junction of the path leading to Lamon may be open next year, in which case, by using the rough car-track up to Lamon, the ground impracticable for wheels will be reduced to some two miles.

The completion of this road will place Primiero and San Martino on a highway—and one of the most beautiful of the highways—to Venice, and must greatly add to the number of their visitors. There is now only one link wanting to bring this district into close connection with the central dolomites, a road over the short and easy Passo di Valles from Paneveggio to Forno di Canale and Cencenighe.

The inns have generally improved of late years, and the 'Pension' at San Martino is good of its sort, though not good enough for its situation, which deserves one of the best inns in the Alps.

VAL NOANA DOLOMITES.—South of Primiero, but screened from the valley and (except for a short space) from the road to S. Martino by the sharp low crest which extends from the Cereda Pass to a point south of Transacqua, rises a group of dolomite crags which, but for their proximity to the famous peaks of Primiero, would long ago have been completely explored. Its second peak, Il Piz, overlooks Val di Mis, and is conspicuous from the path to Agordo. Its highest summit, most appropriately named the Sasso di Mur, is a long wall dominating on the N. and W. the upper branches of Val Noana, and descending on the S. with extraordinary abruptness towards Val Canzoi, of which more anon.

Il Piz has been ascended by a foreign climber. The lower W. summit of the Sasso di Mur has been reached by two parties, neither of which, though they were respectively led by François Devouassoud and Santo Siorpaes, succeeded in making the passage to the highest peak. This summer I planned a walk through this group, which might throw some light on the chances of conquering its 'untrodden peak,' and perhaps open what seemed to me likely to prove the finest route for pedestrians turning southwards from Primiero, by a new pass and a valley hitherto 'unfrequented' in a much stricter sense of the word than that in which it has been generally used by Miss Edwards.

From Primiero an easy path leads through charming scenery over a low pass and then along a terrace to the head of Val Asinozza. This romantic glen ends in a wooded cirque. On the right the Sasso di Mur rises in precipices, the direct ascent of which (despite Mr. Tucker's suggestion in the Primiero Strangers' Book) I venture to pronounce

hopeless. To the left-hand are the more broken crags of Il Piz, and north of these a well-marked cow track crosses the rocky ridge to the Cereda Pass. This would make a short and pleasant excursion from Primiero.

Leaving the path we crossed the stream, and mounted in or near a dry torrent bed, which led us up under the Sasso di Mur to the snow-beds marking the mouth of the narrow cleft, invisible from below, which runs up between that peak and Il Piz. We found ourselves in a long and steep, but perfectly easy, rock chimney, which led (in about 2 hrs. after crossing the stream of Val Asinozza *) to the crest of the range. On the south the ground fell away in a bank of gentians. There were in the chimney no tracks or traces of any passage but that of chamois, and I satisfied myself that the herdsmen on both sides were unconscious of the existence of a pass in this direction. The col commands a picturesque glimpse of some of the Primiero peaks in which the Passo di Ball is singularly prominent; to the south the view is disappointing. A full view of the Sasso di Mur is obtained by walking some hundred yards east from the pass. Any hopes I had entertained that its highest peak might be *easily* accessible from this side were put an end to. What we saw was a great southern spur enclosing, with the hopeless eastern ridge of the mountain, a snowy hollow. Through this hollow a point on the southern spur, distinguished by a natural arch in the crags at the base of the final cliffs, and perhaps about 500 feet below the top, was attainable. But above this the perpendicular walls of cliff which distinguish the mountain were arranged in a formidable maze, which I do not call impracticable, but which I was unable to see at a glance any way through.

We descended to the highest châlet, and then, following the directions of the herdsmen, climbed up over steep grass and flowers to the outer end of the southern spur of the Sasso. On the steep ridge a path had been cut to enable the herds to reach the pasturage beyond it.

The view from this point was magnificent. At an enormous depth below lay a valley, broadening at our feet into a mountain-girt basin, narrowing at a distance between rocks and peaks of noble shape, finally opening upon the broad trench of the Piave near Feltre, beyond which, but for the heat mists, we should have seen the lagoons. This was Val Canzoi, a valley of which, I believe, few travellers have ever heard. With the great tier of precipices of the Sasso di Mur at its head, and fine mountains on either hand, its scenery cannot fail to be very striking, and since it is now shown to lead by a direct pass to Primiero, I hope it may be more visited.

Some way off to the right lay the green ridge which bounds the pasturages of Val della Neve, the southern branch of Val Noana. It was separated from us by the wonderfully steep southern slopes of the Sasso, which break back into numerous hollows. For the first half of the way (down hill) we found a track, hugging the foot of the preci-

* Val Asinozza.—I copy the spelling of the map which, however, is said to embody a blunder, similar to that involved in 'Val Asinella' in the Brenta group.

pices; for the second half (uphill), we had none whatever; the grass slopes were steep and in places there were cliffs underneath.* Without being in any proper sense difficult, these slopes may be found embarrassing by persons unused to rough walking.

This short trial, however, is fully repaid when the pasturages of Val della Neve are reached. The descent to Mezzano is as pleasant a piece of walking as there is in the Alps, a succession of meadows and stoneless paths. At the second châlet the track from the Col della Neve comes in on the left. This mule pass leads by a western branch of Val Canzoi to Feltre. It is crossed by the Italian herdsmen who occupy the pastoral basin at the head of Val della Neve, and sometimes by smugglers.

Near this châlet we crossed the slender stream, here flowing in a miniature gorge, to its right bank, and began a steep descent through fir forests, brightened by golden cascades of laburnum blossom (July 11).

After this descent our feet were indulged in a stretch of soft meadowland, and then (re-crossing the stream opposite the last of a chain of châteaux), in a smooth and shady terrace path, which runs for a mile or two along the hillside before plunging into the noble gorge of Val Noana (in my opinion superior to that of Sottoguda), which makes a worthy finale to a walk of singular interest and variety.

In conclusion I venture to suggest to guide-book editors that they should add to the Routes from Primiero the *Passo di Cunonega* (I have no peculiar affection for the name if a better can be found), and to the Excursions the tour of the Sasso di Mur.

After the first descent from the pass travellers going to Feltre will, at the top of the steep rocks above the Cunonega Alp, find a path down the rocky barrier by bearing to the extreme left. Those who are making the tour should, on the contrary, keep as much as possible to the right, and, without descending to the châlet, scramble over some rocks to the slopes half-way up the southern spur they have to cross. The Cunonega Alp of the new is the Cimonega of the old map. Times: Primiero to Alp at head of Val Asinozza, 2½ hrs.; to Passo di Cunonega, 2 hrs.; to Alp della Neve, 2½ to 3 hrs.; descent to Mezzano 3 hrs.—all steady walking.

I add a few words as to the 'untrodden peak.'

The Sasso di Mur is a singularly well defended summit. The actual ridge between the two crests appeared to me likely to prove always impracticable. It may be possible, however, to descend on to a ledge on the north face, and so pass the gap. If this is not the case, the attack must be made from the hollow south-east of the peak, where a way may perhaps be discovered among the cliffs that guard the summit.

FORCA ROSSA.—The ordinary route from Paneveggio to Caprile is by the Passo di Valles and Cencenighe, and involves a long valley walk or drive. By the aid of the map I worked out a high-level path, which will be preferred by many. It is short, easy and full of interest. Above the

* This path is shown on both the old and new Austrian maps; in the old it stops where it does in fact, in the new it is carried on (I suppose because the engineers thought it ought to be) to the verge of Val della Neve.

Giuribrut Alp the traveller must bear (N.E.) left over the pastures to their lowest point. From the watershed he gains at once a noble view of the Primiero peaks, the Pelmo and Civita, and the Biois valley, and henceforth for some hours enjoys a series of wide and noble prospects of hill and valley, hardly surpassed in the dolomite region. In about 3 hrs. the stream from the P. di S. Pellegrino will be struck, about a mile below the hospice. A long steady, but very easy, ascent leads to the second pass, the Forca Rossa. This is a double col. The western and higher pass (by some 300 feet) opens from a different glen from that which leads up to the lower gap. The two glens communicate, however, at their head, so that either pass may be taken. The lie of the ground is accurately shown (the paths not at all) on the new Austrian map, which prints the words Col Becker near the pass.

The descent lies to the châteaux of Franzedaz, in the south-west branch of Val Ombretta, and so to the Fedaja path, which is joined in the meadow above the gorge of Sottoguda. There is a singularly perfect bed of an extinct glacier below the pass, and a fine view of part of the Marmolata precipices on the descent.—San Pellegrino to Caprile, 4½ hrs. walking (more the other way). There are, I think, very few routes in the Dolomites which command such a succession of distant views. The aspect of the Primiero peaks, with their supporters towards Agordo, from the Forca Rossa, was singularly fine, and a contrast to the very commonplace show they made next day from Col di Lana.

The Forca Rossa is the pass of which Mr. Ball writes * that he has no information, and I do not therefore scruple to bring so useful a route before the notice of travellers.

COL DI LANA.—This grassy pinnacle (8,176 ft., Ball), rising immediately behind Pieve di Livinallungo, is acquiring celebrity as a view point. It may be easily reached in 2 hrs. from Pieve. As the grass slopes are steep, and there is a possibility of reaching a wrong top, divided from the true one by a broken crest, persons unused to mountains will do well to take a boy to show them the way. The view of the Civita is, in itself, well worth the ascent. It is seen from its crest to the Lake of Alleghe, framed by the slopes which surround Caprile. The Tofana and Pelmo, and the glaciers of the Marmolata, show well. On the other hand the Primiero peaks, and the western dolomites, do not do themselves justice. To the north the Zillerthaler Ferner are conspicuous. The mountain, though offering no extensive panorama, supplies well what is somewhat wanted in the Dolomites—a central point suitable for those who do not climb, and may be put in the same rank with Miss Edwards's Sasso Bianco.

I think everyone who had lately seen such a general view must have been struck, even if he had never heard the most popular theory as to the origin of dolomites, in the series of views of islets in the Indian Ocean, published in the *Illustrated London News* of September 18, by the extraordinary resemblance between the forms of the crests of these submerged mountains and some well-known dolomitic

* *Alpine Guide*, edit. 1876, p. 489.

summits. The comparison might be worked out. It would be interesting to see specimens of the rock of which these islets are composed.

It took us 2 hrs. to walk across only a portion of the Incisa Alp, a pasturage which stretches for miles westwards from the Col di Lana and Sett Sasa. In mid-July it was glorious with flowers beyond all Alpine meadows I have ever seen. The Seisser Alp, which I crossed on the following day, was nothing to it. There were bays of rhododendrons, pools of gentians, lakes of forget-me-nots, lilies, tawny and white, brilliant arnica, fragrant nigritella, and I doubt not many other plants which would have delighted a botanist by their rarity, as much as these pleased me by their profusion. A reader of Dante could hardly help trying to repeat to himself the description of the valley of the great princes on the Mountain of Purgatory :—

Non avea più natura ivi dipinto,
Ma di soavità di mille odori
Vi faceva un incognito e indistinto.*

The flatness of the Seisser Alp has been, I think, greatly exaggerated. There is very little level ground on it. The theory of any large portion of it having at any recent geological time been a lake-bed seems, I think, on the spot quite untenable. The greater part of the Alp slopes down at a sufficiently steep angle into a side glen of the Grödner Thal. There is, however, an apparent lake-bed of a few acres in its western portion, close to where the path from St. Ulrich first reaches the pasturage. Here are the most beautiful views, east of the towering Langkofel west of the Orteler group, framed in the green opening of the Ratzes valley. Nearer the Mahlkecht Inn, the Langkofel, in a literal sense, loses its point, and the distant views are inferior.

THE ROSENGARTEN PASSES.—A German writer has very properly pointed out that the pass across the Rosengarten range, described by Mr. Tucker,† is known to the people of the country, and marked in the Austrian map as the Tchagerjoch. A second pass north of the Federer Kogel is alluded to by Bädeler. But I have not yet seen it noticed that there are two Tchagerjochs. The hunter's pass, crossed by Mr. Tucker, is conspicuous from the west. But those who approach the crest from the Vajolet Thal will be led naturally from the foot of the last ascent to a point lower, and approached by milder slopes, a good deal north of the Tchagerjoch. From this gap a snow-filled trench, little steeper than that of the better-known pass, leads down towards the west. The northern pass leads to Pergametsch and Tiers, the southern to the Welschenofen valley. But this is not their most important distinction. The southern pass is a gap between confining crags, and has scarcely any view; the northern pass displays the whole Botzen-Meran basin, with its sunny harvest hills ringed by the shining snows of the Brenta, Adamello, Orteler, Oetzthaler, and Stubai

* I shall have something to say in another number as to Dante's feeling for and knowledge of mountains, which have not, I think, been done justice to in the well-known chapter in Mr. Ruskin's 'Modern Painters.'

† *Alpine Journal*, vol. ix. pp. 114 and 238.

groups; and in the east, besides other dolomites, commands the Cimon della Pala, and its neighbours.

I make no claim to have detected a new pass in the Rosengarten. The route is perfectly easy, and is therefore probably known to German tourists as well as hunters. It seems, however, worth while to do what no one has yet done, point out the great superiority in point of scenery of the northern pass. There is no difficulty in reaching its base from the spur dividing the Tiers and Welschenofen valleys, so that it may be used from either place.

Having done with our pass at a very early hour, we spent the day in what a strict mountaineer might call aimless wanderings. Travellers seem to be little aware of the exquisite beauty of the hills under the wall of the Rosengarten. In July, King Laurin's garden is still gay with a thousand blooms. Lower down are vast tracts of forest containing some of the finest trees I have seen in the Alps. And from every brow or glade there are views, one way of the castled and pinnacled dolomites, the other across the rich glowing valleys of South Tyrol to their bounding snows. All this may be seen within 2 hrs. of Tiers and Welschenofen. At the latter place there is an excellent village inn (Corona).

Mr. Holzmann enables me to add that the Federer Kogel has been ascended from the north-west by a tolerably easy route, and that passes have been found north of it and close to its southern base. The north-west route is doubtless easier than that taken by Mr. Tucker, who attacked the mountain from the north-east, or Val Vajoletti, side.

I made, at the very base of the Rosengarten, another discovery, which nothing shall induce me to divulge—an excellently preserved specimen of a country inn of the old school. Long may the house under the great rock escape the notice alike of the English tourist, who asks for everything least attainable, and of the German tourist, who cannot enjoy the good things attainable for fear of having to pay for them! For if the one perplexes his entertainers by his strange requirements, the other vexes their hospitable souls, at least equally, by the bargain preliminary. But the one renders the other necessary, and it is to Germans doubtless we owe that Rizzi's at Vigo can again (as I hear) be recommended for fair prices as well as comfort.

I shall add here a few words on the inns on the Italian side of the Alps which aim at rivalling Swiss 'Pensions' as places of residence for families. There are many Monte Generosos in Italy, but there are few Dr. Pastas. Swiss innkeepers have European experience; even those of smaller houses have generally acquired it as waiters abroad. In mountain inns south of the Alps, on the other hand, adequate knowledge of the wants of foreign travellers is as a rule wanting. Perhaps capital is wanting too. I should be very sorry to encourage speculation. But it is permissible to regret that some of the money spent in ruining the most picturesque villages of the Italian lakes by monster hotels—sometimes to the ruin of the builders—was not reserved for the probably safer speculation of erecting comfortable mountain inns in suitable situations. The village inns satisfy, as a rule, the requirements of the passing traveller. But high stopping

places, fit for a long stay, are notoriously scarce in the Italian Alps. Those who set up such houses are often not bold enough in their aims. Where the cannier and more sharp-sighted Swiss would seek to attract a European public, they are content to catch the middle-class of North Italian towns. The manager and head waiter are the most amiable of creatures, but the one is a local man of limited experience; the other, perhaps, has spent the greater part of his life in Venetian cafés and can hardly accommodate himself to Alpine habits. Not going to bed at all he understands—no one is better than the Venetian in turning night into day—but to get up at 4 A.M. seems to him an act against nature.

Founders of 'Stabilimenti' who desire English patronage—and they most of them profess to—would do well to bear in mind the following suggestions. They should select their site with reference not only to shelter and convenience, but also to the view and quiet. They should not build in a hole, or behind a bank, or alongside the peasant's house of call, but on some slope or brow where a terrace before the house will serve in fine weather as the principal sitting room. One gloomy ground-floor sitting-room is not sufficient public accommodation: there must be a 'salon' as well. English habits must be respected so far as not necessarily to call in all guests to their heaviest repast at midday, and the cook (in Tyrol) should be instructed that other animals than calves are fit for human food. The government map of the district should be hung up in the salon, so that travellers may trace and plan their excursions. Owing to the dishonesty of travellers, it is impossible to recommend a host to set up a library. Most of the English books given to Bonetti of Primiero have been stolen.

Perhaps some Italians who read this may be disposed to say, 'Oh! those English require too much.' The class for whom I speak are perfectly content with the accommodation at Cortina, Alagna, or Aosta, and find at Courmayeur even more than they require. Is it then unreasonable to try to raise a few more houses to their standard?

IN MEMORIAM.

ELIJAH WALTON, F.G.S.

By the death of Elijah Walton the Alpine Club has lost an artist of great originality and power, who has been remarkably successful in grappling with the difficulties of mountain scenery. Though taken from the world at a comparatively early age, he has left behind him a large quantity of work which, we venture to think, will be appreciated in the future more generally than it has been in the past. Thus his life and labours may fitly receive in the pages of this Journal a little more than the usual brief obituary notice.

Elijah Walton was born in November 1832, and passed the earlier part of his life in Birmingham or its immediate vicinity. A delicate child, his parents not in good circumstances, he had few advantages in education and a hard struggle (notwithstanding the help of a kind

patroness) to follow the art for which his bent was very soon manifested. While still a mere boy—and a very little one—he became a student at the Art School in Birmingham, going forth, whenever possible, to spend long days in the country in the most elaborate and minute study of nature. I possess a drawing of a thistle, made when he was fifteen, which is a wonderfully truthful and well-executed study. After obtaining various distinctions, he proceeded about the age of eighteen to London, and became a student at the Royal Academy, where he had already exhibited and sold pictures. Here he laboured as assiduously as before, devoting himself especially to drawing from the antique and from life. Thus, notwithstanding his early predilection for landscape, his work was before 1860 mainly in figures. I have seen several of the pictures painted during this part of his life. Though decidedly good, they give little sign of his future special style and excellence. By the help of the friend mentioned above he had already paid a short visit to the Alps, but it was not until the year 1860 that he devoted himself to a study of their scenery. I believe that the impulse to this change came from Mr. W. Mathews, who had employed him to make a drawing from one of his own sketches, and had been so struck with the vigour and originality of his treatment, that he urged him to undertake a sketching tour, and offered him a tempting commission.

In the summer of 1860 he married, and in the autumn proceeded to Egypt, where he had the misfortune to lose his wife. He remained in the East until 1862. My friendship with him dates from the month of August in that year, when he accompanied Mr. W. Mathews and myself in a journey to the Tarentaise and Graian Alps, remaining in the Alps after our return. From this time to the last year of his life he made frequent journeys—three to the East, many to the Alps, spending one whole winter under Jean Tairraz's friendly roof at Aosta. He also visited Greece, Norway, Scotland, the English Lakes, Wales, and the Isle of Wight.

In 1867 he remarried, but was left a widower a second time in 1872. This blow prostrated him at the time, and, I believe, shortened his days. In 1879 the state of his health first began to cause grave anxiety to his friends, and to this money troubles were added, for he had never been a good manager of his own affairs. His difficulties were increased by the recent badness of the times, which affected seriously the sale of all works of art, and amongst them of his drawings. His health failed rapidly; brain paralysis, accompanied by epileptic attacks, declared itself, and on August 25 last he passed away, leaving three little orphan boys, for whom, I regret to say, there is but slender provision.

It is always difficult to speak of the work of a personal friend while his loss is yet recent without becoming unconsciously a partisan. It is especially difficult in this case, because much of Walton's work is so unlike that of any other painter. Still, as I think that, while its failings have been often indicated, its peculiar excellencies have been rarely recognised, and that he received during his life more unjust blame than praise, I shall venture to express frankly my own opinion.

Professional critics Walton seldom pleased. I do not presume to

consider myself learned in the canons of art, but I do venture to believe that some accurate knowledge of nature, and of the aspects of nature delineated, is necessary to the true critic. Now in this I not seldom find the critics by profession wholly wanting, and I am not therefore more disposed to bow to their blame in Walton's case, than I am to echo their praise when they raise a chorus over some work which no lover of the Alps can look at without a smile.

Walton's colouring was peculiar. He delighted in atmospheric effects, both in the brilliancy of sunrise and sunset, and in the delicate greys of mist and rain. I believe he sometimes failed, as Turner has failed, in attempting the impossible. At the same time his perception of colour was exceptionally acute, and knowing how this power differs in different men, I venture sometimes to doubt whether one who has passed much of his working life beneath Alpine and Eastern skies may not be a better judge than the critic who for the greater part of the year dwells in London streets. But even if colour be a more subjective matter than people commonly suppose, this is not the case with drawing. The forms of plants, rocks, mountains are facts—very difficult, doubtless, to record, and demanding in their infinity a certain selection, and even occasional convention. Knowing, as a professional geologist, something about rock structure, I have no hesitation in asserting that many landscape artists, held in high repute, have no notion of how to draw a rock. Again and again I have seen hanging on the walls of exhibitions—extravagantly praised by critics, greedily purchased by the public—pictures that to my eyes, whatever their merits in colour or as compositions might be, were full of the most elementary blunders—were like the Latin verses of a clever idle boy, pretty, but with some horribly false grammar and quantities. Walton's best rock drawing is the best that I know—in some respects better even than Turner's.

A similar tribute must be paid to his snow and ice painting. Without questioning M. Loppé's ownership of the glacier, it may be confidently asserted that no artist has ever painted a snow-peak with its slopes and cliffs and cornices with so much knowledge, so much power, and so much poetic feeling, as Elijah Walton.

Another characteristic was his industry. He lived only for his art: it was his one delight; his devotion to it seriously injured his health, for he could not keep away from his brush, and led far too sedentary a life. Whatever he undertook he did as thoroughly as possible. His work on the camel is simply an instance of the elaborate mode in which he carried out all that he undertook in art. Dissatisfied with the camels which he had introduced into his earlier Eastern drawings, and with the general portraiture of that animal, he determined to grapple with the difficulty. Accordingly, on arriving in Egypt in 1863, he purchased a camel, made a series of studies of the living animal, even to mapping out the footprints of its various paces; he had it killed, dissected it, and drew its muscular system, and lastly drew the bones of the skeleton. The results of this labour were afterwards copied by his own hand on stone and published in a volume which has received the highest praise from so competent a judge as Professor Owen,

to whom it was dedicated. Flowers, trees, rocks, figures, clouds were studied with the same unwearied patience. I lay particular stress upon this, because during the last few years he has often been accused of scamping his work, and the mists which he introduced (too frequently by far, as I think) into his Alpine pictures were supposed to be for the sake of saving himself trouble. Perhaps I am the only person living who has been allowed to watch him at his work, as the picture grew under his hands, and I do not hesitate to say that these mists required as much time and more skill in manipulation than an elaborate mapping out of the mountain side would have done.

His versatility was extraordinary. There are not many men who have been successful in painting figures, mountains, trees, and water, the reflection of the Nile under an Egyptian sunset, the midnight sun on Arctic waves, the white gleam of a snow-peak against Alpine blue, or the mists which gather round the rocks of the Pelmo. With the ocean, as may be seen in his Norwegian sketches, he was very successful in a calm, but many of his stormy seas were failures, though some of his later work is in this respect also excellent.

It is only just in conclusion to admit the defects of his work. He was undoubtedly too devoted to certain peculiar effects of atmosphere and colour, and repeated them too often. He neglected often, in his passion for skies and mists and snows, the details of foreground, characteristic of different Alpine districts, and this fault grew upon him. His mind was too completely engrossed in his labour and he lived too isolated a life, secluding himself from the society of fellow workers and from study of their works. It was impossible under the circumstances for him to avoid mannerism. This was increased by the number of small water-colour drawings which he painted; but then the temptation to do this was great; since for these he had a ready market, while his larger drawings—and especially his oil paintings (which were scarcely equal to his works in water colours)—were apt to remain on his hands. It must be considered unfortunate also that he allowed so many of his drawings to be copied by chromo-lithography. This mode of reproduction often enhanced and called attention to their weak points, while its necessary limitations may have tended to confirm in drawings consciously prepared for it the monotony and lack of characteristic detail noticeable in some of his later work.*

* The following is a list of the books which Walton wrote or illustrated:—

- (1) 'The Camel, its Anatomy, Proportions, and Paces.' 1865.
- (2) 'The Peaks and Valleys of the Alps.' 1867.
- (3) 'Clouds and their Combinations.' 1869.
- (4) 'Flowers from the Upper Alps.' 1869.
- (5) 'The Coast of Norway.' 1871.
- (6) 'Peaks in Pen and Pencil.' 1872.
- (7) 'Vignettes, Alpine and Eastern.' 1873.
- (8) 'The Bernese Oberland.' 1874.
- (9) 'Welsh Scenery.' 1875.
- (10) 'English Lake Scenery.' 1876.

The dates are of the first editions. To numbers 2, 4, 5, 7-10, I contributed a descriptive text.

When last I visited Walton, just a year ago (a series of cross circumstances kept us apart afterwards), he said, 'I feel that I have yet so much to do with this hand, and believe that I shall do it.' It was not so written; the active brain was soon to be benumbed, and the right hand which he held up as he spoke, to be still for ever. I little thought then that the next time I should enter Bromsgrove would be to stand with his orphan children by his grave, beneath one of those peaceful autumn skies in which during life he had so much delighted.

T. G. BONNEY.

PETER RUBI

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THERE are travellers to the Alps, I believe, who, having made one or more excursions for which a guide is necessary, still regard their guide as a sort of hired servant a little above the lowest degree. To such persons these words are not addressed, for to them I should be speaking an unknown language. But those will understand me who have known what it is to share day after day the smiles or anger of the high air, and break bread among the perennial snows, with a chosen faithful companion—Oberlander, or Walliser, or Chamouniard; nor these only, but all who have learned the worth of true and simple manhood in times and places where the refinements of our artificial life are of no account. It may be learned nearer home too; for our British seas and moors afford schooling in it as well as the Alps. Therefore it will seem nothing strange to Englishmen of the right sort who use their eyes and their limbs, whether they be Alpine climbers or not, that one should not esteem lightly the loss of a valiant and courteous guide who will never wield ice-axe more. These, I know, are the terms of old romance, associated with pageants and great solemnities, and companies of stately men and fair women. It may seem incongruous to apply them to people who wear hob-nailed boots and clothes of the roughest homespun, and talk in an uncouth highland dialect of German. But if valour and courtesy are not the fitting words for the character of the best Swiss guides, I know not what other to find. They are ever ready to perform what they have undertaken, or at least carry the attempt to the uttermost of man's power, not as the bare fulfilment of a bargain, but joyfully and as an honourable achievement; they are ever watchful not merely for the safety of the travellers they have taken in their charge, but for their ease and comfort in everything; and all this they do as if it were pure pleasure to them, and the most natural thing in the world. Such a one was Peter Rubi, of Grindelwald, who perished on the Lauteraarjoch on the 18th of July last.

Thirteen years ago I made Rubi's acquaintance, on my first visit to Grindelwald. I was then a novice in mountaineering, and the occasion was a suddenly planned expedition, in which my travelling comrade and myself had joined forces with another Englishman. Two guides were required for the party: we took the first that came, and Peter Rubi was

one of them. He was as yet by no means one of the best-known guides, though he had served a good apprenticeship as a porter, and his performance in carrying a long ladder on the first passage of the Jungfrau Joch had been duly chronicled in the account published in England. On the excursion now in question Rubi was the second guide; we knew nothing of him beforehand, but as the day went on we began to take a special fancy to him. There was very little snow, if I remember right, and the work, which was mostly over rocks, was longer and harder than had been expected. But Rubi seemed only to like it all the better. His unwearied vigour and good humour were catching, and our section of the party came to the front. Presently it was discovered that an estimated quarter of an hour remaining between us and our goal—one of those horribly elastic *Viertelstunden* which try the patience of all mountaineers at one time or another—would have to be multiplied by two or three. ‘*Wir kommen bald hinauf,*’ said Rubi, with a confidential chuckle. Up we went in time, though not quite so fast as a more compact party would have done, and down another way by merry glissades and a series of short cuts. We returned to Grindelwald in great elation and charged with a fresh impulse of mountain enthusiasm. One or two other smaller excursions with Rubi on the glacier confirmed our estimate of him; and we parted fast friends, with hopes of more and better climbing for next year.

In due course I found Rubi again at Grindelwald; and for a good part of two seasons we were constantly together, and as active as the weather would let us be. Sometimes we made up a company with other travellers as far as our ways and ambitions went together. Sometimes I was alone with Rubi and another excellent guide and companion, a better known man, though I could find little to choose between them: why should I abstain from naming Peter Baumann, who happily is yet alive and well, and I trust prospering as he deserves? Some days I spent with Rubi either in comparatively easy walks or in such climbing as a guide and a traveller in fair training may well do without a third; and of these expeditions, not of the first rank, but full of interest and exercise, there are more to be had than most people find out. Thus we did not want for variety of occupation and incident, and I saw Rubi at work under a good many different circumstances. Our combined parties were always amusing and mostly successful. We made the acquaintance of all the caves that furnish, or, I should say, used to furnish, advanced posts for the attack of passes and peaks from Grindelwald. In those days the Gleckstein had not been engineered and beautified, and the hut on the Mönchjoch was not thought of. The Kastenstein offered, on the whole, the best quarters; and I am not sure that a good dry cave is much inferior to the modern luxury of a hut. Once we sought, much against our will, the unaccustomed shelter of the deserted goat-herd’s hut on the Zäsenberg. It was past the middle of September, and there were six of us in all, rather a large party for making a long and stiff ascent when the days are fast shortening. So it was that we narrowly escaped spending a second night at the Kastenstein; and had not our guides been eminent in resolve and resource we should not have escaped it at all. We got down

to the glacier, and effected a hurried passage across its upper level, only just before dark. The track into which we struck was plain enough in the daytime, but troublesome after nightfall, being of the staircase kind in places. The guides brought us along it somehow by memory and touch, quite literally clinging to their skirts; it was one of those conjunctures in which the amateur climber feels peculiarly abject, and has his pride thoroughly taken down, if he is foolish enough to cherish any. We might have pushed on fairly well if there had been a moon, but there was none. At last, what niggard light the sky had given us was quenched by a passing thunderstorm. Falstaff might have sworn, without peril to his soul, that you could not see the back of your hand. It must be confessed that Rubi's usual cheerfulness broke down at this point. We had no meat or drink left, and no fire but that of tobacco, and it was quite uncertain when we should be able to go on. The storm abated, however, and we crept gingerly down to the familiar oasis of the Zäsenberg. There we made for the little hut, and were all asleep on the hard earth in two minutes; and thus we completed our round of the sleeping-quarters of Grindelwald. It was a matter of discomfort and loss of time, not of danger, but I have never known guides so much put out. Perhaps they felt that they had leisure to grumble, and might as well do that as anything else. When things turn out serious in the day's work a good guide never grumbles at the time. I have been with Rubi and Baumann when I was glad there were no more of us, and we had to walk on thin layers of new, ill-compacted snow as if we were treading on eggs. Then they spoke few words, and those of simple but strong warning. Only when we had left the ice, and they could discuss the toils of the day over their pipes on a grassy bank, they expressed their opinion freely on the nature of the work and the condition of the snow. We had other days of hard but wholesome and enjoyable climbing; now and then we seized a break in the weather with success; sometimes we strove with it in vain, and sometimes won barren victories. The Petersgrat is said to command one of the finest views in the Bernese Alps, and I believe it on trust; we passed it in a thick mist, which turned to heavy rain; and at the end of the day, having reduced my baggage to the smallest possible amount on leaving Grindelwald, I was fain to learn by experience the weight of an Oberland suit of homespun while my own garments were drying.

Peter Rubi was an Oberlander and Grindelwalder all over: he firmly believed in the supremacy of Grindelwald over all other Alpine centres, and always preferred a plan of campaign which brought him home within a moderate number of days. And I think that for the traveller also there is much pleasure in making a kind of home of a place where he is sure of good quarters, and working out from it and back in various directions. One may cover far more ground by doing otherwise; but to cover the utmost ground in a given time is not the object of holiday travels for a rational man. On the Italian side of the Alps Rubi was not happy; the country and language were strange to him, and I think he felt something uncanny in quitting the German-speaking land: not that an ordinary German understands the Oberland speech when the people talk to one another, or any other Swiss dialect for that

matter. Zermatt seemed to him a tolerable place, but not good for much. It is true that the accommodation provided for guides was none of the best (it may be amended now for anything I know), and this had something to do with his opinion. It is also true that we kicked our heels there for several days in villanous weather, and Rubi thought better of it after we had put Monte Rosa under our feet on one of those perfect days which hardly come twice in a summer. Under favourable conditions such as we enjoyed, it is the ideal of an ascent; no tedious preliminaries, no monotonous stretch of moraine or deep snow-field—just enough climbing to call out activity and steadiness without excessive strain, and a glorious view for reward. In later years Rubi must have got over his dislike to foreign parts. As his reputation increased he was sought after for longer tours, and I heard of his going not only to Savoy and the Italian Alps, but to Dauphiné.

Some of the best days which fell to Rubi and myself at Grindelwald, both as to walking and weather, were those on which we two were alone. There is no better training than going about in this way, as the traveller has to rely on himself considerably more than when he is a unit in a larger party. As to climbing without guides, it is a thing neither to be lightly undertaken nor to be indiscriminately condemned. All proper conditions and safeguards being observed, first of which is the perfect health and competent mountain experience of the whole party, and mutual confidence justly founded thereon, I admit and even admire it as a counsel of perfection: it is a height my own ambition has never attained. It shall here be noted that if any man is apt to think a Swiss guide cannot be good company apart from his professional knowledge, he thinks much amiss. For these men, though they live away from cities, and read and write but little, are neither uninstructed nor incurious. You may converse with them of most things except books, and find them willing hearers and sensible speakers. Their duties as citizens are few and simple as a rule; but when once and again such a matter comes home to them as a revision of the Federal Constitution, their votes are at least as intelligent as the average British elector's—if, indeed, after the disclosures we are now reading every day, that is saying anything. They all have taken their turn at soldiering, too, and may have to take it again. Generally they are spared as much as possible; but at the time of the Franco-German war the service pressed hard upon them. Of the average of Swiss troops I know nothing; but I conceive that the Oberland contingent must be difficult to surpass anywhere in physique and intelligence.

To return to Peter Rubi, however: I think he liked having his fling, as it were, on days of a sort intermediate between rambling and severe climbing. He enjoyed mountaineering for its own sake, and was not sorry to find excuses for leaving a well-known route. If there was anything in which he fell short of guides of the very first rank it was the faculty or instinct of striking out on new ground not merely some way, but the best way. To him every way was good where one could go. But this dash of adventure was far from making him careless. No guide could surpass him for caution and attention in whatever concerned the security of the traveller. Towards the end of a long day, knowing

that weariness is apt to bring heedlessness, he was always ready and on the watch. And when the proper mountain work was over, and there was a residue of dull muscular toil to be got through before reaching our night's rest, he was unfailing in aid and encouragement. Let it not be supposed that I would set up Rubi as a paragon of guides: there have been and are many like him, and therefore it is no waste of words to say that in remembrance of him which many, from like experience of other men, will know to be true. But one cannot thus know more than one or two; and to lose a man thus known, even after a parting of several years, is to lose a friend.

FREDERICK POLLOCK.

NEW EXPEDITIONS.

THE Expeditions recorded in the following pages are believed to fall under the definition given in an early number of this Journal, that is to say, not to have been previously accomplished by English mountaineers, or noticed in the Journal. In the cases where foreign climbers had preceded the writers, reference has, as far as possible, been made to the original accounts.

Dauphiné District.

ECRINS, BY THE SOUTHERN FACE (4,103 mètres = 13,462 feet).—*September*.—Monsieur Henry Duhamel, with the two Gaspards as guides, starting at 4 A.M. from some huts in the Vallon de la Pilatte, an hour from La Bérarde, followed the usual route up the Glacier du Vallon to the Col des Avalanches (described as Col du Vallon de la Bérarde)* Striking up the rocks to the left they soon bore to the right, and by a difficult bit gained a snow couloir descending to the Glacier Noir. Mounting steadily they reached the snowy southern face, whence it is easy to reach the summit direct or by either the east or west arêtes. They descended by the same route, reaching La Bérarde at 9 P.M. As much snow and ice was found on the rocks owing to the previous bad weather, it seems as if the true route up the Ecrins had been found.

COL DES MASSES (c. 8,500 feet).—*June 22*.—Messrs. Frederick Gardiner and W. A. B. Coolidge, with Christian Almer and his son Christian, crossed this pass, which does not seem to have previously attracted the attention of travellers. Starting from Valloire they passed (in 35 mins.) near the village of Poingt Ravier, and in 25 mins. more kept up the right-hand fork of the valley. In 1 hr. 45 min. more the base of the final slope was reached, the ascent of which was unexpectedly steep, and occupied 1 hr. 15 mins., the col (a narrow ridge) being thus gained in 4 hrs. walking from Valloire. The view was cloudy. Steep slopes of shale and snow led down in 40 mins. to the grass slopes in the Combe de Pierre Fendue, and a point near some chalets was reached in $\frac{1}{2}$ an hr. more. The party then struck to the left up the Combe, passed opposite the chalets of La Motte in 50 min., and in 1 hr. 55 mins. (leisurely walking) gained the Base du Gerbier, whence a descent of 20 mins. led them to the chalets of Rieublanc —4 $\frac{1}{4}$ hrs. from the col. Like the easier Pas du Gros Grenier,† it affords direct communication between Valloire and S. Jean d'Arves.

* *Alpine Journal*, vol. viii. 33.

† *Ibid.* vol. ix. p. 96.

CENTRAL AIGUILLE DE LA SAUSSAZ (3,321 mètres=10,896 feet).^{*}—*June 23.*—The same party, having reached the Col Lombard by the ordinary route in 3 hrs. 40 min. from Rieublanc, descended for 20 min. on the La Grave side of the col, and then, turning the buttress of the northern Aiguille, struck up the Glacier Lombard. The ascent was perfectly easy, but very wearisome. The summit of the peak was reached in 1 hr. 55 min. from the point where the route of the Col Lombard was quitted. This was the first ascent of this peak, which is the highest of the three Aiguilles de la Saussaz. Next in height comes the southern Aiguille, ascended in 1864 by Messrs. Moore, Walker, and Whymper,[†] then follow the northern Aiguille, and the Bec du Grenier, the latter being as distinctly the lowest of the group as the Goléon (11,251 feet) is the highest. A few of the Dauphiné peaks were seen, but the sight of the three Aiguilles d'Arves is the feature of the view.[‡] The Col Lombard route was regained by glissades in 40 mins., and the descent down the Combe du Goléon resumed. Seen from Rieublanc, this peak is a double-headed summit, but the lower table is really quite insignificant.

PIC DE LA GRAVE, lower summit (3,649 mètres = 11,972 feet).—*June 25.*—The same party, having ascended the highest peak of this mountain § in 2½ hrs. from the Glacier du Mont de Lans (the snow on the north face being in very bad condition), gained in 10 min. more the lower (N. W.) peak, which bore no traces of a previous ascent, the glacier being thence regained in 45 min., the Refuge de la Lauze in 50 min. and La Grave in 1½ hr. more.

PIC DES TROIS EVÊCHÉS (3,120 mètres = 10,237 feet).—*June 27.*—The same party, with young Christian Almer only, ascended this peak, hitherto only reached by foreign travellers,^{||} and effected a new descent to Les Loettes. Starting from La Grave, they passed through Villar d'Arène, and reached the Lac du Pontet in 1 hr. 40 min. leisurely walking. Steep grass slopes, and loose rocks led them thence in 1 hr. 45 min. to the south-east ridge of the peak, just north-west of the point marked on the map 'Villar d'Arène, 1^{er} Signal, 2,688 mètres. They kept along the crest of this rocky ridge, being sometimes forced to take to its eastern slope, and reached the lower summit (3,096 mètres = 10,158 feet), in 1 hr. 40 min., and the highest point (on which was a small cairn) in ½ an hr. more (585 from La Grave). Mist and falling snow entirely concealed the view. They had intended to descend by the north-eastern arête to the lower part of the Combe du Goléon; but, keeping too far to the right, they descended steep snow

^{*} Cf. Whymper, *Scrambles* (orig. ed.), p. 188.

[†] Whymper's *Scrambles*, 189. Moore's *The Alps* in 1864, pp. 23-4.

[‡] In this connection it may be mentioned that, when the above party made the second ascent of the Southern Aiguille d'Arves on July 6, it was ascertained, for certain, that it is slightly lower than the Central Aiguille d'Arves, and that consequently the French map is wrong.—Cf. *Alpine Journal*, vol. ix. p. 95. As much time was lost on the first ascent searching for the way, it may be useful to note the times of the second ascent. Col Lombard to base of hard bit, 1 hr. 20 min.; to top, 30 min. (in all, 1 hr. 50 min.). Descent to base of hard bit, 45 mins.; to Col Lombard, 1 hr. 5 min. (in all 1 hr. 50 min.).

§ Cf. *Alpine Journal*, vol. vii. p. 145.

|| *Annuaire de la Société des Touristes du Dauphiné*, vols. ii. p. 69; iv. p. 62.

slopes to the head of the Vallon du Fond (55 mins. from top). In 35 mins. quick walking, they gained the slopes directly above the châteaux of Les Rapias, and Les Losettes, whence they regained La Grave in 3 hrs. 25 min. by the Col du Goléon (1 hr. 45 min. up, 2 hrs. down). The snow throughout the day in shocking order. The name of the peak is derived from its position at the point at which the boundaries of the three dioceses of Gap, Grenoble, and S. Jean de Maurienne come together. The route which they had intended to have taken is quite easy and much shorter than that described above.

EASTERN PEAK OF THE MEIJE (8,911 mètres = 12,832 feet).—*June 29.*—The last-named party effected the second ascent of this peak, the lowest of the three summits of the Meije. Having reached the Col de l'Homme in 5 hrs. 5 min. walking from La Grave by the Glacier de Tabuchet, they traversed snow slopes for 20 min. to the bergschrund at the foot of the peak, and then cut up the slope (just where three small rocks jut out from the snow) to the eastern arête, which was followed to the top (much step-cutting being required), reached in 2 hrs. 15 min. from the bergschrund. The view was quite cloudless and most glorious. The central peak of the Meije assumed a most startling appearance, something like a paper-knife set on end, and bending over to the Etançons Valley, while behind it were seen the three cairns on the western peak. This peak had been ascended for the first time by the same route by Monsieur Henry Duhamel on August 21, 1878: * but the party were prevented from visiting the cairn he built, on a slightly lower point to the south, by the ticklish condition of the snow. The return to the bergschrund was made in 1 hr. 35 min., and La Grave regained in 2 hrs. 10 min. more (3 hrs. 45 min. from top). This peak (the precise position of which was uncertain until the appearance of M. Duhamel's excellent map, of which a revised edition will be shortly published in the *Journal*), is the point at which the ridge of the Meije abuts on the chain of the Bec de l'Homme. It is very well seen from the bridge between the two tunnels near La Grave.

PIC GASPARD (8,880 mètres = 12,730 feet).—*July 1.*—The same party, with both Almera, effected the second ascent of this peak, which is so striking a feature in the views from the Lautaret Hospice, and the Pic de Neige Cordier. Starting from the Refuge de l'Alp, they mounted for 2½ hrs. by the usual route of the Col des Cavales, then struck up to the right up stony slopes, which higher up merged into smooth glacier-polished rocks. In 45 min. the Glacier Supérieur des Cavales came into sight, and by mounting along it, the ridge overlooking the Glacier de l'Homme, at the eastern foot of the peak, was reached in 1 hr. 45 min. The rocky face of the mountain was then attacked, care being taken to keep on the (proper) right of the central couloir, until near the top it became necessary to traverse it and several smaller ones. The rocks were extremely rotten and fairly steep. The southern or lower summit was reached in 1½ hr., and the northern or highest in 25 mins. more by an extremely jagged and narrow ridge. The view was inter-

* *Annuaire du Club Alpin Français*, vol. v. pp. 127-131.

esting, especially in the direction of the Meije. The first ascent was made (and the peak named in honour of the well-known guide), on July 6, 1878, by Monsieur H. Duhamel, by the route just described.* In descending, the lower point was regained in 15 mins., and the glacier in 2 hrs. more, the rocks being very treacherous, and requiring great care. The glacier-worn rocks were very annoying on the descent. The level of the Vallon des Cavales was reached in 1 hr. 25 min., and the Refuge de l'Alp in 1 hr. 5 min. more. Total ascent, 7 hr. 5 min.; descent, 4 hrs. 45 min. The mountain may be counted as one of the half-dozen more difficult peaks of Dauphiné.

COL EMILE PIC (3,502 mètres=11,490 feet, Guillemin's map; 3,475 mètres=11,401 feet, Duhamel); PIC DE NEIGE CORDIER (3,615 mètres=11,861 feet).—July 8.—The same party starting from the Refuge Tuckett (which they had reached by the Col de la Roche Faurio and the Roche Faurio) followed the ordinary route of the Col des Ecrins for 1 hr. 40 min., then struck up a lateral glacier and reached a col overlooking a steep broad couloir leading to the Glacier des Arsines in 1 hr. 30 min.† The true col (which lies at the south-western foot of the Pic Cordier, and is the left hand depression seen when mounting from the Glacier Blanc) was reached in half an hour more (in all 3 hrs. 40 min. from Refuge Tuckett) by rounding the base of the Pic Cordier. The ascent of the last-named peak was effected by the western face and rocky south-western ridge in 25 min., but a very high wind prevented more than a short halt, the col being regained in 15 min. The descent then lay down the easy Glacier des Agneaux of M. Guillemin's map. Bearing at first far to the right, then to the left, the ice was quitted in 1 hr. 5m., and the level of the Vallée de la Platte des Agneaux gained by moraine, snow slopes, easy rocks and moraine again in 50 min., and the Refuge de l'Alp in 1 hr. 15 min. more, or 6 hrs. 50 min. from the Refuge Tuckett (3 hrs. 40 min. up, 3 hrs. 10 min. down). *This col is by far the easiest between Vallouise and La Grave*, the Cols du Glacier Blanc and de la Roche Faurio being both difficult on the La Grave side. It was discovered on July 8, 1877, by M. Paul Guillemin, who named (after his La Grave guide) but did not cross it, and made the first ascent of the Pic Cordier.‡

The first passage was made by MM. Patrognnet, A. Henriot, and J. Jullien, on July 17, 1877,§ and it has been crossed three or four times subsequently,|| but had hitherto remained unknown to English climbers. The ascent of the Pic Cordier, described above, is probably the third.¶

POINTE DE L'ÉGLIÈRE (3,325 mètres=10,909 feet); COL D'ENTRAIGUES (2,926 mètres=9,600 feet).—July 11.—The same party

* *Annuaire du Club Alpin Français*, vol. v. pp. 106–108.

† Possibly this is Signor A. E. Martelli's Col de Neige, cf. *Alpinista*, vol. ii. p. 120; *Annuaire de la S. T. D.* vol. i. p. 82.

‡ *Annuaire du Club Alpin Français*, vol. iv. p. 202; *Annuaire de la S. T. D.*, vol. iii. p. 177.

§ *Annuaire du Club Alpin Français*, vol. iv. p. 204. *Annuaire de la S. T. D.*, vol. iii. p. 77.

|| *Annuaire de la S. T. D.*, vol. iv. p. 53. ¶ Cf. *La Durancie*, 10 Août, 1879.

made the second ascent of this peak and the first passage of this Col. Starting from Ville Vallouise, they reached the hamlet of Puy S. Vincent in 40 min., and in 50 min. more, passing through a magnificent forest, crossed to the left bank of the stream and gained the châteaux of Narreyroux, picturesquely situated at the entrance of the valley of the same name. Following the bed of the valley for 15 min., they commenced to ascend its northern slope, and by grass and loose rocks, getting gradually steeper and looser, gained (in 2 hrs. 50 min.) the Crête de l'Eyglière overlooking the Vallon des Banca, near the stone man which marks M. Guillemin's Col d'Entraigues, apparently just to the west of the point marked 2,968 mètres in the French map. An easy ridge of rock and snow led in 1 hr. 30 min. more to the summit of the peak, which is seen from Narreyroux (but not from Ville Vallouise), and does not overlook the Vallon des Banca (5 hrs. 50 min. from Vallouise—leisurely walking). The view of the Dauphiné, Queyras, and Chambeyron groups was very fine, and the ranges of the Protestant valleys to the south were examined with interest.

The first ascent was made from Narreyroux on September 17, 1877, by MM. P. Guillemin, A. Salvador de Quatrefages, and Corbin (who named but did not cross the Col d'Entraigues), descending to the Vallon de la Selle from a point on the south-western arête.*

Returning in 30 min. to the Col d'Entraigues, the party descended snow slopes, and then a very steep and difficult rocky barrier, *keeping far to the right*. Crossing to the left bank of the stream below this barrier, they forced their way over steep slopes and through a small forest, finally striking a faintly-marked path which led them to the bridge opposite the châteaux of Les Faurées (some way below Entraigues) in 2½ hrs. from the col. This descent is very wearisome and in parts really difficult: looking back from Les Faurées, it was almost impossible to trace the route actually followed, and the natives were much astonished at the accomplishment of this descent. Vallouise was regained in 1 hr. 10 min. more by the usual path—4 hrs. 10 min. from the summit. The ascent of the Eyglière by Narreyroux is perfectly easy and admirably adapted to fill up an off-day at Vallouise, while the Col d'Entraigues offers very interesting climbing and the opportunity of returning to Vallouise by another route.

PELVOUX.—*July 14.*—The same party ascended all the peaks of the Pelvoux. Having reached the Pointe Puiseux (the highest point 3,954 mètres = 12,978 feet, Tuckett), in 3 hrs. 5 min., without stopping, from the Refuge de Provence (2 hrs. above the old bivouac at Soureillan), they walked in 15 min. to the Pic de la Pyramide (3,938 mètres = 12,921 feet), where a bit of an old staff was found, which had been probably left by Captain Durand, on the occasion of the first ascent in 1828. Thence in 10 min. they gained a snowy point to the south-west of the Pointe Puiseux, which is conspicuous in distant views, and overlooks the Refuge de Provence. Passing over three little knobs seen from below, the party in 30 mins. descended to the head of the

* *Annuaire du Club Alpin Français*, vol. iv. pp. 230-5; *Annuaire de la S. T. D.*, vol. iii. pp. 172-8.

Glacier du Clot de l'Homme, and remounted to the Petit Pelvoux (3,762 mètres = 12,343 feet, probably the second ascent). They then turned their steps towards a peak, composed of three rocky teeth, overhanging the Pré de Madame Carle. The southern tooth was reached in 35 mins. from the Petit Pelvoux, by a steep snow slope, and the shattered northern arête, and the central and highest tooth by the southern arête in 20 mins. more. The Refuge de Provence was regained in 1 hr. 50 min. more. As it was very early morning, the snow was still hard, which greatly facilitated the above round. The Petit Pelvoux, and the rocky peak last climbed are the two summits which tower so magnificently above Les Claux. Monsieur E. Boileau de Castelnau made on July 31, 1877, an expedition resembling, but not identical with, that just described, including what is supposed to be the first ascent of the Petit Pelvoux on record.*

CRÊTE DES BŒUFS ROUGES (3,481 mètres = 11,547 feet); COL DES BŒUFS ROUGES (nearly 11,000 feet).—*July 16.*—The same party made the second passage of this pass and the third ascent of this peak. Starting from the Refuge Puiseux (formerly known as Soureillan), they followed the ordinary route to the Glacier du Sélé for 1 hr. 35 min.; then, crossing to the right bank of the glacier in 10 mins., mounted snow slopes to the rocks forming the western boundary of the lateral glacier coming down from the desired col. These were found to be very steep, and in parts exposed to falling stones and fragments of ice, mounting rapidly to avoid which, and keeping rather to the right towards the end, they gained the right bank of the upper plateau of the glacier in 1 hr. 50 min. from the Glacier du Sélé. This route is not recommended, the proper line, descending, being to bear over the rocks on the left bank of the lateral glacier, and reach the Glacier du Sélé much higher up than was done by the above party. Forty minutes over snow led to the col, which lies to the east of the peak, and is well seen from below (in all 4 hrs. 15 min. from Soureillan). The peak was then ascended in 35 mins. by the eastern arête, the snow being very heavy. The principal feature of the view is the sight of the opposite range, including the Pelvoux, Pic Sans Nom, and Ailefroide. The Ecrins was also visible. There is no doubt that this peak is inferior in height to that to the west, marked 3,454 mètres in the French map.† Returning to the col in 25 mins., a short and easy glacier was traversed and quitted on the left bank in 15 mins. Glissades down snow slopes, and the bed of the stream led to grass on the right bank of the stream in 15 mins. more. Keeping near the stream, they descended a rocky barrier, and, bearing to the right over spurs, gained in 45 mins. a wooden cross (the upper of two), overhanging the châteaux of Entraigues. The proper way lies very far to the left hand, but in ignorance of this, the party effected a very steep descent over grass slopes and smooth rocks, reaching the châteaux in 1 hr. 15 mins. from the cross, or 2½ hrs. from the col. Vallouise was reached by the ordinary path. This pass is of no practical utility, but is interest-

* *Bulletin du Club Alpin Français*, 1877, p. 302.

† *Alpine Journal*, vol. viii. p. 333.

bank were taken to for a few minutes. The ice was quitted in 1 hr. 55 min. from the col, and the route of the Col du Loup regained in 15 min. more, near a grassy plateau, before the steep descent to the lower valley. Descending this slope in 25 min. they crossed by a bridge to the right bank of the torrent, and reached Le Clot at the head of the Val Godemar in 1 hr. 5 min. Total, up, 8 hrs. 40 min.; down, 8 hrs. 40 min. This is a fine pass connecting the heads of two valleys, but it is rather a circuitous route from Champoléon to Le Clot, or La Chapelle en Godemar.

AIGUILLE D'OLAN (3,383 mètres = 11,157 feet).—*July 24.*—The same party, starting from the chalets of La Lavey (which they had reached from the Val Godemar by the Col de la Muande), followed the usual track to the upper plateau of the Glacier des Sellettes, along the eastern slopes of the Aiguille d'Olan (2 hrs. 30 min.) Then keeping along rocks and snow slopes, they gained the southern foot of the Aiguille in 55 mins., where a bay of snow runs up into the peak. Taking to the rocks well on the left side of this bay (the first steps are awkward), they climbed up them mainly by a couloir, gained the southern end of the highest ridge and traversed it to the northern or highest point, reached in an hour from the snow. The view was very fine and extensive, the north face of the Pic d'Olan (later climbed by Mr. Cust) being most magnificent. Returning by the same route, the snow was regained in 1 hr. 15 min., the level of the valley gained in 1 hr. 30 min., by a direct descent, and La Lavey in 50 mins. more. Total, up, 4 hrs. 25 min.; down, 3 hrs. 35 min. The ascent lies in great part over stones and moraine, and is one of the most wearisome in Dauphiné. This was the third ascent of the peak. It was first reached by Mons. E. Boileau de Castelnau on September 2, 1876, by nearly the same route described above. He effected an easy descent in an hour to the little Glacier du Fond Turbat at the head of the Val Joffrey.* The second ascent was made on August 26, 1879, by Mons. James Nérot.† This peak is the one which towers up so finely when seen from the La Bérarde path, opposite the opening of the Combe de La Lavey.

BRÈCHE GIRAUD LÉZIN (3,598 mètres = 11,835 feet); **GRANDE RUINE, FROM THE NORTH** (3,754 mètres = 12,316 feet).—*July 28.*—The same party, starting from the Hôtel du Châtelleret in the Vallon des Etançons, reached the Glacier de la Grande Ruine by the usual route in 1 hr. 30 mins. Mounting it for 10 mins. they then bore to the left, towards the steep rock wall immediately north of the peak of the Grande Ruine, reaching the foot in 40 min. Climbing up this wall (the lower rocks being the most difficult), taking to the snow gullies now and then, as the rocks were excessively rotten, they reached the ridge (at the northern of two notches) in 2 hrs. 30 min. from the snow. This is the Brèche Giraud Lézin, of which the only previous passage had been made by Mons. Henry Duhamel on August 13, 1878,‡ who named it from one of

* *Annuaire de la S. T. D.*, vol. ii. pp. 125-8.

† *Bulletin du Club Alpin Français*, 1879, p. 176. The ascent was made from the Glacier du Fond Turbat.

‡ *Annuaire du Club Alpin Français*, vol. v. p. 122.

de Palluel in 1 hr. 50 min. Continuing the ascent over a rocky barrier and snow, they gained the south-eastern arête in 40 min., and followed it, in the face of a high wind, to the summit in 40 min. more—3 hrs. 10 min. from the village. A ruined stone man was found on the top with two names, and the word 'Éternité' engraved on it; it was probably erected by the French Engineers, but no traveller seems to have hitherto visited this peak. The view was interesting, extending down the entire valley of Freissinières (including Dormilhouse), and on the other side taking in Prapic and the course of the Drac; some houses belonging to Gap were clearly seen. Descending for a few minutes along the arête, the party descended on to the Glacier de Chaulier—a large field of névé—and keeping to the left across it, quitted the snow in 40 min. from the peak, and reached the Col de Prelles path in $\frac{1}{2}$ an hr. more. Owing to a misapprehension on the part of a porter, the party was forced to mount nearly to the Col de Prelles before finding him. Then bearing across a rocky buttress and descending by snow slopes, they climbed up over steep stones and débris to the desired pass (reached in 1 hr. 30 min. from the point near the Col de Prelles), which apparently lies to the north-east of the point marked 3,052 mètres on the French map. An hour would have amply sufficed from the point where the Col de Prelles was gained on the descent from the Grand Pinier, but it is necessary to be very careful to keep sufficiently to the right (and yet not too much), in order to avoid coming into the valley of Orcières. The col was named from the valley lying to the north. Steep snow slopes, succeeded by steep rocks, on which it is necessary to bear to the right, led, in $1\frac{1}{2}$ hr., to the floor of that valley (whence the wall, which had just been descended, looks very formidable). In a few minutes the path of the Pas de la Cavale was reached, and in 30 min. more, after crossing to the left bank of the torrent, and gaining the point of junction of this side valley, with the main valley, they reached the ruined chalet at the head of the Champoléon valley, used for a bivouac by Mr. Gardiner's party in 1879. It is in a strikingly desolate situation.

COL VERDONNE (c. 10,200 feet).—*July 21.*—The same party, starting from the ruined chalet just mentioned, mounted the Vallon de la Pierre along the left bank of the torrent. Then crossing it, they gained the upper slopes of the rocky barrier at the head of the valley, and so reached the glacier in 2 hrs. 50 min. from the bivouac. Crossing the glacier in $\frac{1}{2}$ an hr. to the base of a snow couloir, they climbed up this in 20 min. to the col, which lies just to the south-west of the Pic Verdonne (the local name of the peak marked 3,824 mètres on the French map). Up to this point the route had been practically the same as that taken by Mr. Gardiner's party in 1879, in the ascent of the Pic Verdonne.* Leaving the col (whence the view is not very extensive, though including Ecrins, Pelvoux, Ailefroide, and Olan), they descended a very steep snow slope (probably ice later in the season), bearing to the right, and then worked their way down a steep crevassed glacier. To avoid the final ice-fall, the rocks on the right

* *Alpine Journal*, vol. ix. p. 360.

bank were taken to for a few minutes. The ice was quitted in 1 hr. 55 min. from the col, and the route of the Col du Loup regained in 15 min. more, near a grassy plateau, before the steep descent to the lower valley. Descending this slope in 25 min. they crossed by a bridge to the right bank of the torrent, and reached Le Clot at the head of the Val Godemar in 1 hr. 5 min. Total, up, 3 hrs. 40 min.; down, 8 hrs. 40 min. This is a fine pass connecting the heads of two valleys, but it is rather a circuitous route from Champoléon to Le Clot, or La Chapelle en Godemar.

AIGUILLE D'OLAN (3,883 mètres = 11,157 feet).—*July 24.*—The same party, starting from the chalets of La Lavey (which they had reached from the Val Godemar by the Col de la Muande), followed the usual track to the upper plateau of the Glacier des Sellettes, along the eastern slopes of the Aiguille d'Olan (2 hrs. 30 min.) Then keeping along rocks and snow slopes, they gained the southern foot of the Aiguille in 55 mins., where a bay of snow runs up into the peak. Taking to the rocks well on the left side of this bay (the first steps are awkward), they climbed up them mainly by a couloir, gained the southern end of the highest ridge and traversed it to the northern or highest point, reached in an hour from the snow. The view was very fine and extensive, the north face of the Pic d'Olan (later climbed by Mr. Cust) being most magnificent. Returning by the same route, the snow was regained in 1 hr. 15 min., the level of the valley gained in 1 hr. 30 min., by a direct descent, and La Lavey in 50 mins. more. Total, up, 4 hrs. 25 min.; down, 3 hrs. 35 min. The ascent lies in great part over stones and moraine, and is one of the most wearisome in Dauphiné. This was the third ascent of the peak. It was first reached by Mons. E. Boileau de Castelnau on September 2, 1876, by nearly the same route described above. He effected an easy descent in an hour to the little Glacier du Fond Turbat at the head of the Val Jouffrey.* The second ascent was made on August 26, 1879, by Mons. James Nérot.† This peak is the one which towers up so finely when seen from the La Bérarde path, opposite the opening of the Combe de La Lavey.

BRÈCHE GIRAUD LÉZIN (3,598 mètres = 11,835 feet); **GRANDE RUINE, FROM THE NORTH** (3,754 mètres = 12,316 feet).—*July 28.*—The same party, starting from the Hôtel du Châtellet in the Vallon des Etançons, reached the Glacier de la Grande Ruine by the usual route in 1 hr. 30 mins. Mounting it for 10 mins. they then bore to the left, towards the steep rock wall immediately north of the peak of the Grande Ruine, reaching the foot in 40 min. Climbing up this wall (the lower rocks being the most difficult), taking to the snow gullies now and then, as the rocks were excessively rotten, they reached the ridge (at the northern of two notches) in 2 hrs. 30 min. from the snow. This is the Brèche Giraud Lézin, of which the only previous passage had been made by Mons. Henry Duhamel on August 13, 1878,‡ who named it from one of

* *Annuaire de la S. T. D.*, vol. ii. pp. 125-8.

† *Bulletin du Club Alpin Français*, 1879, p. 176. The ascent was made from the Glacier du Fond Turbat.

‡ *Annuaire du Club Alpin Français*, vol. v. p. 132.

his guides, a rising man of Villar d'Arène. The party were now at the edge of the great snow-field at the northern foot of the Grande Ruine, and proceeded to ascend that peak along the northern arête and face,* the summit being gained in half an hour from the Brèche (5 hrs. 20 min. from the starting point). The sky was cloudless and the view most wonderful and extensive: in fact, there is perhaps not a finer panorama to be had from any other peak in Dauphiné. Descending by the south-eastern ridge (the usual route), they gained the snow plateau, crossed the south-eastern ridge,† and then traversed snow slopes to the Col de la Casse Déserte (1 hr. 20 min. from the top). The descent was made on to the Glacier de la Grande Ruine, keeping far to the left. In 50 min. the bergschrund was crossed, the glacier quitted in 15 mins. more, and the Châtelleret regained in 55 min. Total, 3 hrs. 20 min. The ascent of the Grande Ruine by the Col de la Casse Déserte is quite practicable in one day from La Bérarde. It is even easier and shorter from the Refuge de l'Alp.

TÊTE DE LA GANDOLIÈRE (3,549 mètres = 11,644 feet).—*July 29.*—The same party made the second ascent of this peak, and by a new route. Starting from the Châtelleret, they climbed up the grass slopes on the western side of the Vallon des Etançons and took to the glacier on the north of the peak (which may conveniently be named Glacier de la Gandolière) in 1 hr. 15 min. Circling round this they gained a snowy spur projecting from the eastern arête of the peak in 50 min., and by means of rocks and a great patch of snow on the northern face reached the eastern arête in 35 min. This was rather jagged and narrow, but the rocks were firm, and the summit reached in 40 min. The view was fine, but exclusively confined to Dauphiné peaks. With some difficulty the party gained a great gully in the southern rocky face, descended it for some time, then bore to the right, and descended on to the snow in 55 min. from the top. The rocks of this face are not altogether easy. The descent down the Glacier du Plaret was straightforward. The ice was quitted in 40 min., and the descent to the level of the Vallon des Etançons effected in 1 hr. 15 min., by glacier-worn rocks, and grass slopes on the left bank of the torrent. La Bérarde was reached in an hour more. Total (fast walking), up, 3 hrs. 20 min.; down to La Bérarde 3 hrs. 50 min. The first ascent was made on July 12, 1878, from the Glacier du Plaret by Mons. Edward Rochat.‡

TÊTE DE LORANOURE (3,299 mètres = 10,824 feet and 3,341 mètres = 10,962 feet).—*August 1 and 4.*—Mr. Coolidge, with the two Almers, made the ascent of both these summits. The former is the beautiful pyramidal point, so conspicuous from S. Christophe, and when descending from La Bérarde. The latter appears from S. Christophe as a long jagged arête to the right of the pyramidal peak.

Starting on August 1 from S. Christophe to attempt the former (which was apparently the highest), the party crossed the Venéon, and reached the Alpe du Pin by a steep path in 1 hr. 15 min. from the

* This route had been previously taken by M. Duhamel, August 10, 1878. *Annuaire du Club Alpin Français*, vol. v. p. 112.

† *Alpine Journal*, vol. vii. p. 140.

‡ *Annuaire du Club Alpin Français*, vol. v. pp. 152-4.

village. Here there is a fine view of the Ecrins, the Fifre, and the Pic Coolidge. Mounting over grass slopes and stones they gained in 1 hr. 15 min. the snow-field seen to the extreme left from S. Christopher, where the 'du' of the Glacier du Pierroux is placed on the map. They struck up and then across it, to the base of the rock wall in half an hour. Climbing up this wall and then bearing to the left, they mounted a narrow snow couloir well seen from the village, and so gained the crest of the north-western arête in an hour from the snow. An easy walk up this led to the summit in 40 min. On this was a ruined stone man, and, a short way below, the fragments of an ancient wooden pole. This peak was ascended by a somewhat different route on August 18, 1878, by MM. A. Carbonnier and C. Rabot, who found on the top a bluish envelope post-marked 'Grenoble, Aug. 8, 1867.'* The view from the summit is curious, as it includes S. Christophe, Bourg d'Oisans, and the bridge over the Vénéon a couple of minutes from La Bérarde. As soon as the party had gained the peak, it was evident that a higher point lay to the south-west, but the arête connecting the two was so jagged that several hours would be required to force a passage along it; and also the weather, always doubtful, had now changed for the worse, and a snow-storm began. Being thus driven down, the party resolved to descend by the Combe de la Mariande, as MM. Carbonnier and Rabot had done. Retracing their steps for 10 minutes or so, they kept to the left down stony slopes, and then, bearing to the right, descended a steep ridge, or rather mountain side (to avoid a rocky barrier) to a snow-filled basin lying below, gained in 50 min. from the top. This snowy basin is well seen from the path between S. Christophe and La Bérarde. Keeping nearly at a level to the left, they gradually traversed the mountain side, and then descending, reached Alpe du Pin in 1 hr. 15 min. from the snowy basin, and regained S. Christophe in 50 min. more. Total—up, 4 hrs. 40 min.; down, 2 hrs. 55 min. The height of this peak is marked on the Carte du Pelvoux.

After having been detained at S. Christophe two days by bad weather, they started again on August 4 for the highest peak of the Loranoure. Retracing their steps up to a point near the huts of Alpe du Pin in 1 hr. 5 min., they took to the Glacier du Pierroux immediately under 'Le Pierroux' (2,875 mètres), in 1 hr. 40 min. Keeping close under the rocks, they ascended a steep gully or couloir, which brought them to the upper plateau of the glacier, over which a few minutes walk brought them to the rocky arête in 1 hr. 35 min. from the time the glacier was reached. These rocks were easy, but then covered with much fresh snow, so that half an hour was required to reach the stone man. It was then found that the first and only previous ascent of this peak had been made on August 5, 1879, by Mons. A. Carbonnier.† The view was very fine, especially towards Mont Blanc and the Roche de la Muzelle, and included Bourg d'Oisans and S. Christophe; but from the latter village it is difficult to distinguish the highest part of

* *Annuaire de la S. T. D.*, vol. iv. pp. 88-90.

† *Annuaire du Club Alpin Français*, vol. vi. 145; *Annuaire de la S. T. D.*, vol. v. p. 120.

the rocky arête, though the stone man is perfectly visible. Twenty minutes sufficed to regain the snow, in 40 min. the glacier was quitted, in an hour Alpe du Piu was reached, and S. Christophe in 50 min. more. Total—up, 4 hrs. 50 min.; down, 2 hrs. 55 min. This expedition is strongly recommended as an easy day from S. Christophe, and as suited for those who do not feel up to the ascent of the Aiguille du Plat.

COL DE LA HAUTE PISSE (c. 3,000 mètres=9,843 feet); PIC SIGNALÉ (3,263 mètres = 10,706 feet); POINTE DE LA MARIANDE (3,162 mètres = 10,375 feet).—*August 5.*—The same party starting from S. Christophe climbed up to the Alpe du Pin again by the well-known path in 1 hr. 5 min., then followed a track which led them round the corner to the level part of the Combe de la Mariande in 1 hr. 5 min. more. Walking up this, they reached the great buttress marked on the map as separating the Glacier des Arias from the Glacier de la Mariande, zigzagging up which by a faint track, crossing patches of snow every now and then, they gained the final snow alope which led them up to the col in 2 hrs. 50 min. (5 hrs. from S. Christophe). The col (whence the view is very extensive) lies between the Pic Signalé and the point marked on the map 3,162 mètres, close under a bold rocky aiguille to the south of the former peak. It is one of the oldest passes in Dauphiné (there is a ruined stone man on it), and was visited by Monsieur Elie de Beaumont.* It has been more recently crossed by Monsieur Guinier on July 5, 1877.† Soon after reaching the pass, Mr. Cust's party was descried just reaching the summit of the Pic d'Olan, and their movements watched with great interest. As there was plenty of time it was resolved to try the Pic Signalé. Skirting the base of the bold aiguille, mentioned above, along snow slopes, they gained the depression between it and the Pic Signalé, and then struck up the great gully in the south face of the latter peak, keeping to its right (ascending). The rocks were perfectly easy, and the little platform forming the summit was reached in 40 minutes from the Col de la Haute Pisse. No traces of any previous ascent were found, although there were plenty of loose stones about, with which a huge cairn was built; but it is right to add that Mons. de Mons, with P. Paquet, is said to have made this ascent on August 18, 1879, though no details are forthcoming.‡ The view was interesting from the position of the peak at the junction of three considerable valleys. The col was regained in less than half an hour by the same route. As this ascent had taken so short a time the party determined to try the peak 3,162 mètres to the south-east of the col. A first attempt by some greyish rocks on the north face failed, owing to the smoothness of the rocks and the quantity of new snow lying on them. After some hunting about, the crest of the north-western arête was gained by means of a high and steep chimney in some reddish rocks nearer the col than the greyish rocks spoken of above. This ridge was very

* *Annales des Mines*, 3^{me} Série, tome 5 (published in 1834), pp. 8, 13, 23, 26.

† *Annuaire de la S. T. D.*, vol. iii. p. 68.

‡ *Annuaire de la S. T. D.*, vol. v. p. 143-4.

jagged, but the rocks were good: as soon as possible, however, a descent was made on to the snow-streaked rocks of the western face, and by these the summit was gained (after passing over a lower peak) in 50 minutes from the snow at the base of the chimney. It was here found that the peak was the northern and highest point of the mountain, a slightly lower summit lying to the south. The village of Le Désert en Jouffrey was seen from the top, as also a long stretch of the Val Jouffrey. After building a cairn in honour of the first ascent, and baptizing the peak *Pointe de la Mariande*, the descent was effected by the same route, the Col de la Haute Pisse being regained in 55 min. from the top. It may be noted that this peak is well seen from Le Clot between La Bérarde and S. Christophe. Descending from the col by snow slopes and bearing across slopes of stones to the right, the party turned sharply to the left after a short steep barrier of smooth rocks, and gained a shepherd's hut in an hour from the col after a long but interesting day. They returned to S. Christophe next day in very bad weather by Les Berches and the Combe de Lanchatra.*

LE FLAMBEAU DES ECRINS (c. 3,600 mètres = 11,812 feet).—*August 9.*—The same party, starting from La Bérarde, made the first ascent of this peak. Following the route of the Col de la Temple for 2 hrs. 5 min. up to the point where it bears to the right across some rocks, they then struck up to the left (the peak being in full sight), and mounted slopes of débris and rocks to a tongue of glacier seen from below, and reached in 1 hr. 30 min. Ascending this, they gained in an hour the upper snows of the extreme northern corner of the Glacier du Vallon and in 15 min. more the rocks at the base of the peak. The actual summit—a steep rock pyramid (the sole approach to difficulty of the whole expedition)—was conquered, *viâ* the western ridge, in 20 min. more. The top is so extremely sharp that it was impossible to build a cairn: so an empty preserved meat tin, enclosing the names of the party, was left in a cleft and secured with stones. The peak is not marked on the maps. It lies to the east of that marked 3,523 mètres (which is considerably lower), and is just at the point where two ridges running up towards the Ecrins unite. It thus dominates the Glaciers de la Bonne Pierre and du Vallon. The name given to it was suggested by its torch-like appearance when seen from the Roche Faurio. It is very conspicuously seen in front of the Ecrins, from the path leading from S. Christophe to La Bérarde. The view is very fine.

Descending the final peak in 10 min. and following the same route as on the ascent, the party quitted the glacier in half an hour, rejoined the Col de la Temple route in 50 min., and regained La Bérarde in 1 hr. 35 min. more. Total—up 5 hrs. 10 min.; down, 3 hrs. 15 min.

TÊTE DU SALUDE.—*August 2.*—Mr. Cust, with the two Gaspards, reached this summit from the Vallon de la Mariande. They struck the main ridge at a point intermediate between the Tête du Salude and the Pic Signalé, leaving at some little distance on the east the small glacier marked on the map. The ridge was too jagged to allow of continual progress, and the party mainly kept on the west side. The

* *Alpine Journal*, vol. vii. p. 315; vol. ix. p. 361.

final peak, which stands out boldly, but rocks of which afford good hold, was gained from the same side. The position of the peak on the map is incorrect. It really lies immediately south of the highest point of the Loranoure, and so close that the first impression was that the true summit of the Salude had not been reached. Between the two, however, there is a remarkable and deeply-cut chasm not indicated on the map. The figures 3,231 placed on the Carte du Pelvoux apparently apply to the lowest point in the ridge to the south. The descent was made by the Vallon de Lanchatra. Times (exclusive of halts): S. Christophe to ridge, $4\frac{1}{2}$ hrs.; to top, 2 hrs.; descent to foot of rocks, $1\frac{1}{2}$ hr.; to S. Christophe, 4 hrs.*

PIC D'OLAN (8,573 mètres = 11,728 feet).—August 5.—Mr. Cust, with Gaspard père and C. Roderon, ascended this mountain by a new route. Leaving La Lavey at 2.30 A.M., they crossed the Glacier des Sallettes to the arête running north from the mountain, and overlooking the Val Joffrey. The ascent was made throughout by this arête, and occupied from 3.40 to 12.13. The descent to the glacier, in which the same route was followed, required 2 hrs. 50 min. The point reached was the northernmost of the two summits, which is beyond a doubt the higher (the difference amounting probably to 15 or 20 feet), and had been once previously reached,† other parties‡ having only ascended the southern summit. The ascent on this side, when the rocks are in good condition, is both easier and safer than that on the other. It can only be recommended, however, when the season is sufficiently advanced to clear the arête of snow.

Mont Blanc District.

AIGUILLE DES CHARMOZ.—We understand that Mr. A. F. Mummery, with Alexander Burgener and Benedict Venetz, effected on July 15, from the Glacier des Nantillons, the first ascent of the lower peak of the Aiguille des Charmoz, that seen from the Montanvert. We hear also that a pinnacle of the same peak, just south of the Col de la Bûche.§ was ascended by Mr. J. A. Hutchinson on August 18. The rocks were very difficult.

AIGUILLE OR PIC DU TACUL (3,438 mètres = 11,280 feet).—August 6.—Messrs. Henri Pasteur, James Eccles, F. C. Hartley, and W. E.

* Monsieur Henri Vincent claims to have made the first ascent on August 18, 1879, with C. Roderon. Mr. Cust states, however, that there are several, perhaps three peaks, in the Salude ridge, of which his is the highest, and that Gaspard pointed out the central of these (i.e. south of Mr. Cust's peak) as the summit ascended by M. Vincent. I can bear witness to the fact that the point lying just south of the remarkable gulf described by Mr. Cust, is the highest in the ridge between the Loranoure and the Pic Signalé. In all probability different peaks were attained by the two parties, and this idea is confirmed by M. Vincent's account (*Annuaire de la S. T. D.*, vol. v. p. 143-5), from which it appears that he gained the ridge south of his peak by a great snow couloir, and made the ascent from the Glacier du Vallon, no mention being made of the very remarkable chasm.—ED.

† *Alpine Journal*, vol. viii. p. 331.

‡ *Alpine Journal*, vol. vii. p. 316; ix. p. 361. *Annuaire de la Société des Touristes du Dauphiné*, vol. i. p. 103. *Annuaire du Club Alpin Français*, vol. iv. 265, 270; vol. vi. 62, 65.

§ *Alpine Journal*, viii. 344.

Davidson, accompanied by Michel and Alphonse Payot and Edouard Cupelin of Chamonix, and by Hans von Bergen and Peter Anderegg of Meiringen, left the Montanvert Hotel at 4.15 A.M. to attempt the ascent of the Aiguille du Tacul.

They reached the Lac du Tacul (which exists, however, this year only in name) soon after six o'clock, and mounted thence by steep slopes and grass, shale, and snow, to the small glacier on the northern face of the mountain which is so plainly seen from the Montanvert. A short but fatiguing trudge upwards through deep snow brought them to the foot of the final rocks of the peak, at a point immediately beneath the summit. These rocks rise very precipitously for three or four hundred feet, and although it would no doubt have been possible to climb straight up them, the easier and shorter route appeared to be to reach a small gap on the north east ridge of the mountain some distance to the left of the peak, and thence to follow the ridge to the summit. This course was accordingly taken, and after a stiff and interesting rock scramble of three-quarters of an hour's duration, the summit was reached by Messrs. Hartley and Davidson, with von Bergen and Anderegg, at eleven o'clock, and by the rest of the party about half an hour later. Owing to a thunderstorm, no view was gained by the first division of the party, but the weather clearing a little the second division caught some magnificent glimpses of the range between the Grandes Jorasses and the Mont Mallet, which is probably better seen from here than from any other point. Messrs. Hartley and Davidson returned to the Montanvert at 4 P.M. by the same route. Messrs. Eccles and Pasteur descended by steep but not difficult rocks to the Glacier des Périades, joining the route of the Col du Géant immediately below the icefall.

Monte Rosa District.

COL DU LION. MATTERHORN, BY FURGGEN RIDGE.—We understand that on July 6 Mr. A. F. Mummery, with Alexander Burgener, effected the first passage of the *Col du Lion* from Zermatt to Breil, and that on July 19 the same party, and Benedict Venetz, ascended the *Matterhorn* by the *Furggen ridge* as far as the base of the final peak, and then rejoined the ordinary route near the first chain by a difficult rock traverse.

JUNGTHALJOCH. GÄSSJOCH.—August 9.—Mr. J. Stafford Anderson, with Alois Pollinger and Alex. Leugen, explored these passes, which are either quite new or practically so. Starting from S. Niklaus, they went up the Jungthal, and gained the ridge (6½ hours from S. Niklaus) at the head of the Jungthal Glacier just where the buttress of the Festhorn joins the arête descending south from the point marked 3,206 metres. From this point (which may be conveniently named *Jungthaljoch*), Gruben, in the Turtmanthal, could be easily reached in 4 or 5 hours. The party, however, kept to the left along a snow slope, and regained S. Niklaus by a hunters' pass just south of the Güssi Spitzen, the Stelli Glacier, and Walkersmatt. This last pass may be named *Gässjoch*, and is perhaps identical with the *Rothgrat* pass of Tschudi (*Schweizerführer*, edition of 1880, p. 281), who, however,

makes it descend into the Einfischthal! Mists prevented the party from fixing the exact position of these passes, which are both very easy of access, and, judging from the height of the Barrhorn, must be over 11,000 feet.

VARIATION ON THE ADLER PASS.—*July 26.*—Mr. T. L. Murray Browne, with Peter Bohren (who is still fit for first-class work), reached this pass from the Riffl by passing round the base of the Stockhorn by the Gorner Glacier. This variation was suggested by Mr. Ball, but appears to have been rarely, if ever, adopted.

BALENFIRNJOCH (c. 11,974 feet).—*August 9.*—Messrs. A. Caddick and W. M. Conway, with Aloys Burgener and Basil Andermatten, crossed this new pass. Starting from Saas at 8 A.M., they descended the valley to the church at Unter dem Berg, then crossed to the left bank of the stream, and reached the châteaux of Alpje in 1½ hr. from Saas. In 1½ hr. more by zigzags and slopes of débris they reached the foot of a wall of rock, which they began to climb at the base of a rib dividing two gullies. It took 2 hrs. to ascend this wall, which is 1,150 feet high, the rocks being rotten below, but firm and good higher up. It is north of the rocky ridge which bounds the Bider glacier to the north. A stone man which they built at the top of the rocks is visible from Saas and from Visp. A short snow slope led to the ridge running north-east from the point marked 3,676 mètres in the Federal map. Ascending this ridge for a few minutes, the party then gained the Balenfirn glacier by glissades, and crossed it in half an hour, descending some 500 feet. They then ascended by easy rocks to the west of a snow slope, and reached the ridge about a quarter of a mile north-west of, and half an hour below, the summit of the Balenfirnhorn. The view from the pass is very fine, particularly the Weisshorn. The descent was made to S. Niklaus by the Gassenried glacier. The pass was reached from the S. Niklaus side in 1878 by Mr. Conway, but the descent to the Balenfirn glacier was not then effected.*

GABELHORN BY THE SOUTHERN FACE (4,073 mètres = 13,363 feet).—*August 28.*—Dr. G. H. Savage, with Joseph Imboden and J. M. Chanton, starting from a bivouac 3½ hrs. from Zermatt above the left bank of the Arben glacier, reached the surface of the glacier in 1½ hr. by the great lateral moraine. Mounting close to a rocky rib which divides the glacier, and leaving an icefall on the right, they crossed a snow slope to the end of this rib in 1½ hr. more. Traversing the glacier in half an hour to the base of the south face of the peak, they climbed straight up this, meeting with several bits of great difficulty, to a point in the south-west ridge to the left of the summit. This point was gained in about 3 hrs. from the glacier, and the summit was gained in 2 hrs. more by steep rocks, then coated with ice, on the Zinal face. The descent was effected by an almost perpendicular slope from the centre of the 'fork' to the point where the rocks were first touched in the ascent.

* *Alpine Journal*, vol. ix. p. 116.

Bernese Oberland.

GEISSHORN (3,746 mètres = 12,291 feet).—*August 26.*—Mr. Coolidge, with Anton Walden, of Naters, as guide, made the first ascent of this peak. Starting from the Belalp Hôtel, they reached in 1.45 by the ordinary route the solitary châlet seen from the Belalp, which bears the same name as those below—Trist. Striking up behind the moraine on the left bank of the glacier just above (locally called Trist Glacier), they took to the ice, here very crevassed, in 1.20. Mounting up this, they reached the plateau between the Fusa horn* and the Geishorn, and gained the rocky ridge forming the south-west arête of the latter peak, which was followed to the top (3.45 from the time the glacier was reached, owing to very heavy snow). A violent storm did not allow them to erect a cairn. Descending for a few minutes along the south-east arête, they regained the glacier in 20 minutes by a steep curtain of snow, keeping nearer the left bank of the glacier than on the ascent; they quitted the ice in 1.10, and reached the upper châlet of Trist in 1.05 more. They regained the Belalp Hôtel in 1.35 more, taking a short cut from the lower châlet of Trist, known to the initiated as the Col de la Blanchisseuse. Total (fast walking)—up, 6.50; down, 4.10. The way described is very circuitous. It would probably be possible to ascend the peak from the head of the Ober Aletsch glacier.

Lepontine Alps.

OFENJOCH; PASSO DEL FORNO.—*September 7.*—Mr. Cust, starting from the châlets of Lebendun, ascended by a snow gully on the west side of a considerable glacier lying between the Ofenhorn and the Punta del Forno, omitted on the Swiss map, to a depression in a high ridge rising south-east from the Ofenhorn, which it is proposed to call the Ofenjoch.† A glacier at the head of the Devera valley, which, enclosed in an angle between this and another ridge of the Ofenhorn more to the west, rises to the edge of the depression, was crossed to a gap in the latter ridge considerably lower down and at the extreme head of the Binnen Thal. The descent on the other side is by snow slopes and débris. The summit of the Ofenhorn was reached in $\frac{1}{2}$ hr. from the pass. This is the only direct pass from the Lebendun valley to the Binnen Thal. Time to pass, about 3 hrs.; to second gap from pass, $\frac{1}{4}$ hr.

It is proposed to give the name *Passo del Forno* to a gap at the head of the first glacier above mentioned, offering as it does an interesting and easy glacier passage between the Lebendun and Devera valleys. From Tosa Falls it may be reached by the Nuefelgiu Pass and the Obersee without descent to Lebendun. On the south the ascent is by a slope of débris, to the foot of which a passage from the Binnen Thal may be found at a higher level than that of the Albrun Pass.

THÄLIJOCH.—*October 3.*—The same gentleman reached Tosa Falls

* *Alpine Journal*, vol. v. p. 276.

† Not to be confused with Mr. Gardiner's pass.—*A. J.* ix. 64.

from the Hohsänd glacier by a gap between the Thällhorn and the Bannhorn, approached on both sides by easy slopes of débris and snow. A path descends from the right edge of the ravine east to the Nuefslgiu valley, whence Tosa Falls may be reached by the path across the hill in about 2 hrs. from the glacier. For this pass, offering the shortest and most direct access to the Hohsänd glacier, the above name is proposed.

PASSO DI CAVAGNOLI; PASSO DI FORMAZZORA.—*September 8.*—The same gentleman, starting from Tosa Falls, reached by a débris gully, near the foot of the Bocchetta di Valmaggia, a gap between the Fiorera and the Marchhorn, at the edge of the Cavagnoli glacier (time about 3 hours). From the pass, for which the above name is proposed, the *Marchhorn* (2,963 mètres) was ascended in 20 minutes. This mountain deserves a visit, from its accessibility and the beauty of a view inferior only to that from the Basodine. In less than $\frac{1}{2}$ hr. from the summit a gap was reached at the east end of the low wall of rock which bounds the glacier on the north. An easy descent down snow slopes leads to the Alp Formazzora, whence a path round the shoulder to the right may be taken, affording a beautiful view of the head of the Val Bedretto, and descending from the châteaux of Stabbinascio to the Hospice. The same gap was reached on a subsequent occasion from the Alp Robiei. The left bank of the glacier, at a level little below that of the gap, is directly and easily reached by a débris gully in the ravine at the head of the Val Bavona. As offering an easy glacier passage lower and more direct than that by the ordinary Passo Grandinagia, which connects the same ravines, it is proposed to consider the gap a separate pass, with the name *Passo di Formazzora*. By it and the Nufenen Pass the Val Bavona may doubtless be reached in one day from Ulrichen.

PASSO DI BAVONA.—*September 27.*—The same gentleman, starting from Airolo, and following an agreeable path ascending from Ossasco, and then traversing the hillside past the châteaux of Valeygia, reached near its summit the right bank of the glacier at the head of the Val Cavagnolo. A gully of easy rocks and débris led from the glacier to the lowest point of the ridge at the extreme head of the Val Bavona (time about $5\frac{1}{2}$ hrs.). A direct ascent may be made from the Hospice. The descent on the south was by gentle slopes of débris and snow. The Alp Robiei may be reached in about $1\frac{1}{2}$ hr. This being the lowest pass (about 8,700 feet) connecting the head of the Val Bavona with that of the Val Bedretto, the above name is proposed.

PASSO DI VALEGGIA.—*September 29.*—The same gentleman reached from the Glacier di Cavagnoli a débris gully (without descending below the level of its lower end), leading to a gap north of peak 2,867 m. at the head of the Valeygia Glacier. The peak is some 40 feet above the pass, and must command a good view. A lower gap was reached in the ridge east of the same peak, and at the head of the basin of the Lago Bianco, an easy descent to the latter being apparent. To this lower gap (about 9,250 feet) it is proposed to give the above name, the gap first reached (higher by about 100 feet) being a variation of the same pass. In descending from either gap it is necessary to keep high up till a shoulder further east is crossed, when an easy descent is found

to the right bank of the Vallenggia ravine. From this point a gap in the rocky ridge bounding the latter, traversed by a path, and commanding good views, was crossed, and an easy descent found in the direction of Ossasco to a charming grass plateau above the châteaux of Stabbio Grande, overlooking the whole upper valley. From the châteaux paths lead down to Ossasco. A direct descent of the Vallenggia ravine may be made, but is not likely to be so interesting as the above course.

By combining the Cavagnoli and upper Vallenggia passes, a pleasant and easy glacier route may be taken from Tosa Falls to Airolo. Time to P. Cavagnoli, 3 hrs.; to head of V. Bavona, 1 hr.; to P. Vallenggia, $\frac{1}{2}$ hr.; to gap, 1 hr.; to Airolo, 2 hrs. = 8 hrs. including additional half-hr. for Marchhorn. The Passo di Cavagnoli may be combined with equal ease with the Forcla di Cristallina.

Bernina District.

Piz TSCHIERVA (3,570 mètres = 11,713 feet).—*July 13.*—Mr. Walter Leaf, with Hans Grass as guide, made the first ascent by the western arête—the rocky ridge running down towards the Roseg Restaurant. Leaving Pontresina at 4.30 A.M. the party reached the small level portion of the Misaun Glacier below the icefall at 7.40, crossed this and ascended some distance by a prominent couloir, and then took to rocks on the left, rather difficult at times, which led up to the end of the western arête, which from the Roseg Restaurant looks like an independent peak. From this point the ridge was followed to the top, the apparently formidable teeth being all turned by the south face without serious difficulty beyond what arose from the great quantity of soft snow lying on the rocks. The summit was reached at 12, say $6\frac{1}{2}$ hrs. actual walking from Pontresina—descent by the ordinary route. The expedition will be found interesting for a short day from Pontresina.

Piz MORTERATSCH (3,754 mètres = 12,316 feet).—The following note from the 'Fremdenbuch' at the Boval hut is forwarded by Mr. W. Leaf, who repeated the expedition on July 8, 1880. Owing to Mr. Pratt's sad death a few days after his excursion, it has been hitherto unnoticed. Mr. Walford followed Mr. Pratt at a distance of about a quarter of an hour.

(No date—probably about *August 20, 1878.*)—'Arrived here 1.30 from Piz Morteratsch. Started from Pontresina 3.45. Left Roseg Glacier Hôtel 6.0. Mounted by a new way from Tschierva Glacier, going almost as far as the saddle between the peak and the Bernina before turning to left up south face. Rocks easy all the way except on arête near the top, where a little difficult, but quite firm and giving good hold. Reached top 11.20, left at 12. No view, cold wind and mist blowing about, a little snow falling.

'J. H. PRATT with HANS GRASS.

'L. M. WALFORD with ANDREAS RAUCH.'

Piz BERNINA (4,052 mètres = 13,257 feet) FROM TSCHIERVA GLACIER.—*August 15.*—Mr. B. Wainwright, with Hans Grass and his son Christian, starting from the 'Roseg Restauration,' reached the Roseg

glacier by the usual route, then struck across to the left in the direction of the Tschierva glacier, the lower part of which is very much crevassed. Passing over an isolated patch of moraine and some rocks, they gained the upper plateau of the Tschierva glacier, and bore across it, turning many crevasses, towards a steep slope of snow which rises from it to the highest peak of Piz Bernina. After a short rest on a mass of avalanche débris at the foot of this slope, they proceeded to cut up the latter, working straight up towards a point in the north arête slightly to the left of the summit. But as the slope became gradually steeper and changed into ice, and as a mist had come on, they bore away to the rocks on their left, which rise up as a steep buttress from the glacier to the arête. Keeping along or close by these for some time, they took to the slope again when near the arête. It was here composed of loose snow, with rocks rising out of it in every direction. The climb up it and along the arête to the summit was the most difficult part of the day's work. The summit was reached at 10, the final slope having taken 3 hours. The descent was made by the ordinary route.

Dr. Tauscher, of Pressburg, and his wife, with two Sulden guides, reached the summit later on the same day by the new route.

This route joins Dr. Gössfeldt's from the Bernina Scharte* at the point where the arête is struck.

Zillerthal Group.

THE OCHSNER FROM THE GUNKEL KAAR (c. 10,500 feet).—August 16.—Messrs. Marshall and R. Starr, with Johann Falkner of Sölden, Oetzthal, and Josef Kröll, the brother of the landlord, as porter, left Ginzling at 5.45, intending to ascend the Rotherkopf, described by Mr. Pendlebury—who was prevented by falling masses of snow from climbing higher than some 150 feet below the summit†—as affording a fine view of the Zillerthal range.‡

About 20 min. walk from Ginzling brought them to the steep path, leading up through a fine wood to the Gunkel Kaar, a small valley high up between the Floiten Thal and Zemmgrund. Passing the Jäger's hut to the right, they followed the 'Jagdweg' for some distance, then climbing steep slopes, struck the rock ridge running down from the desired peak, about one third of the distance that it skirts the glacier descending from below the ridge connecting the Rotherkopf and Ochsner with the Gross Ingent and the mass dividing the Gunkel Kaar from the Zemmgrund. They found the rocks very steep, with but little hold in places and very loose in others. Making good progress for some time, they were at length brought up by an enormous mass of perfectly smooth rock, which effectually barred further progress. They were only a few yards above the glacier to the right, to which they descended by scant foothold. The snow proved steep, but steps were easily kicked in it; they shortly regained the ridge and made directly for the summit, which was reached at 1.20 P.M.,

* *S. A. C. Jahrbuch*, xiv. 123; *A. J.* ix. 168.

† *Alpine Journal*, vol. vii. p. 234.

‡ So too Van Sonklar (*Zillerthal Alpen*, 20) did not reach the highest point.

after about $8\frac{1}{2}$ hrs. on the ridge and the glacier. The view is exceedingly fine and merits all Mr. Pendlebury's eulogium.

From this peak they noticed a lower, but conspicuous point to the left, between themselves and the Feldkamp. This they afterwards ascertained to be the real Rotherkopf, and the party had really ascended the Ochser, the higher of the two, which had never been climbed from the Gunkel Kaar, though frequently from the Schwarzenstein Alm (6,696 feet), where the German Alpine Club have built an excellent hut (the Berliner Hütte), to which the party descended by the usual route at 5.35 P.M. Time, 7 hrs. 5 min. up; 2 hrs. 35 min. down—2 hrs. 10 min. rest. Mr. Ball speaks of the Rotherkopf (Ochser) and, as in the case of other peaks in this group, there seems to have been some confusion as to the real name; the people were unanimous in saying the Ochser was the highest, and they must be the best informed on the point.

THE SCHWARZENSTEIN (3,867 mètres = 11,047 feet), DESCENDING BY THE FLOITEN GLACIER.—*August 17.*—The same party ascended the Schwarzenstein by the usual route, which is quite easy, in 3 hrs. 40 min. walking. It was too cloudy for a good view, but enough was seen to show how fine it would be in clear weather. As far as the upper ice fall of the Floiten Glacier, the descent was perfectly easy, but the glacier looked very nasty, torn by immense crevasses in all directions, and for the most part falling at an excessively steep angle.

The party had considerable difficulty in threading their way through the maze, here utilising a snow bridge, there leaping the chasms; one was so wide that the rope (80 feet for four persons) was only just long enough to admit the spring without unbinding. They finally found a way down to the left, under an enormous wall of turreted ice, and reached the final icefall, then almost free from snow, down which they had to cut steps, the angle being 50° or more for nearly the whole distance. Crossing the lower glacier to the right moraine, they exchanged difficult ice work for troublesome stones—huge, loose, and numerous, extending almost to the first hut, from which the path to Ginzling (8 or 9 miles) is fairly good. The top was quitted at 12.20 and the lower glacier reached at 4, nearly $2\frac{1}{2}$ hours of that time having been consumed on the icefall, which is a magnificent one from a picturesque point of view. At 8.20 P.M. they regained Ginzling, after 11 hrs. 40 min. walking, having rested 3 hrs. 25 min.*

THE OLPERER (3,489 mètres = 11,447 feet, Sp. K.).—*September 3.*—Mr. Starr with E. Samer (known as Josele) of Breitlahner, and Martin Dech, ascended this peak, which had not previously, it is believed, been reached by an English party, from Breitlahner. It is an interesting climb; the north-east arête is long and steep and there is some stiff rock work. The view was perfect, extending far to the east of the Dolomites, all of which were quite clear: then came the Pressanella-Adamello, the Orteler, and the Bernina groups, while far away in the sunshine glittered some of the giants of the Swiss Alps.

* It would appear from a remark in the *Zeitschrift des D. & Ö. A. Vereins*, 1879, p. 103 that the ascent by the Floiten Glacier had been previously accomplished, but I have been unable to find any details of the route.—ED.

Whether for the view or for the climb the mountain is the finest in the Zillerthal. Properly speaking, it is in the Tuxergebirge, of which it is the highest point, and even in the Zillerthal Alps proper it yields only to the Hochfeiler (11,535 feet). Time, 8 hrs. up; 4.25 down.*

FUSSTEIN (8,380 mètres = 11,090 feet).—September 5.—Mr. Starr, with Hans Lechner of Breitlahner, and Johann Ebel, effected the first ascent of this peak, which had defied many previous attacks.†

Starting from the Zamser Alm at 5 A.M. they walked up the valley to the new Kaser Alm, 40 min. After a halt of half an hour, they mounted through a wood to a stony plateau, gradually ascending to the first moraine, which is in a singular hollow between a mass separating the Schramma and Rippen Glaciers, and the ridge descending from the Fusstein. Beyond several streams rose a steep wall of rock partly covered with grass, in the middle of which was a rubbish shoot. Making for the hollow or crack nearest this shoot, they gained the glacier at 9 10, and at 11.5 the summit of the Fusstein. The glacier was just steep enough not to require step cutting. The snow couloir on the east face by which the final peak was scaled, and which had been reconnoitred on the way up the Olperer, afforded good foothold at an acute angle (perhaps 70° or more) for the greater part of an hour, and from its head a steep rock scramble of a few yards led to the top. The couloir, however, is exposed to stones and avalanches. The view is much the same as from the Olperer. The south-west side falls very steeply for a short distance, and then appears to be a sheer precipice down to the Alpeiner Ferner. Further west, a ridge offers an apparently practicable route, but just below the summit is quite impracticable. Leaving a woollen glove in a stone man, the party left the summit at 1.5; in 50 min. the base of the couloir was reached, and by a rapid gliasade the snow quitted in 25 min. more. At 4.20 they regained the Neu Kaser Alm, whence a rapid walk of 2 hrs. led to Breitlahner. Time—up, 4 hrs. 50 min.; down to Breitlahner, 4 hrs. 55 min. Both the guides, especially Lechner, went very well.

The ascent is not more difficult than the Triftjoch, but might be different were the couloir filled with ice. As it was, the moraine proved the most troublesome part of the ascent.

Great confusion formerly prevailed as to the nomenclature of this group, but it is now ascertained that the Olperer and the Fusstein are two entirely distinct peaks of the Tuxergebirge.‡

* The first ascent was made by Dr. Grohmann, September 10, 1867 (*D. & Ö. Zeitschrift*, vol. ii. p. 139), from the Zamser Alm above Breitlahner; the second by the same route on July 30, 1876, by Herr F. Löwl (*Zeitsch.* 1878, p. 195); the third (?); the fourth by Herr Böhn and Zismondy, on August 1, 1879, with descent by north-west arête (*Mittheilungen*, 1879, p. 171); the fifth by Dr. Fikeis, on August 2, 1879, direct from the west (*Mittheilungen*, 1879, p. 172; cf. *Zeitschrift*, 1878, p. 195); the sixth and seventh by Dr. Chiari, from Zams, and by Herr W. Gräff, by the route of Dr. Fikeis (*Mittheilungen*, 1879, p. 172).—ED.

† Cf. *Oesterreichische Alpen-Zeitung*, 1879, p. 34; 1880, p. 250.

‡ Cf. *Jahrbuch d. Oester. Alpen-Ver.*, vol. ii. p. 95; vol. iii. pp. 105, 125; *Zeitschrift*, vol. ii. p. 135; and von Sonklar's *Die Zillerthal-Alpen*, in Petermann's *Mittheilungen*, p. 11.

Oetzthal Group.

TOBARETTA-JOCH (3,264 mètres = 10,709 feet, D. u. O. A. V. map).—*August 10.*—Mr. A. Butler and the Rev. T. H. Archer-Houblon started from the Glieshof (a Bauern-Haus, about $1\frac{1}{2}$ hr. above Matsch), with the view of ascending the Weissakugel by the Matscher Ferner. The weather was unfavourable, and after about two hours, snow began to fall. Their guide, Josef Spechtenhauser, thereupon suggested that they should cross to the Schnals-*Thal* by a pass of which he knew, between the Aeussere Quell- and Schwemser-Spitzen, whence if the weather cleared, they might be able to reach the Weissakugel. They turned off to the north-east up the small glacier without a name on the Austrian Ordnance Map, lying between the Langgrub- and the Matscher-Ferner. It is numbered 175 on Sonklar's map; and on the map of the D. und Ö. A. V. is called Oberetter Ferner. Josef, however, declared that the right name was Tobaretta, and called the pass Tobaretta-Joch. They reached the top, marked by a patch of rocks, in about $3\frac{1}{2}$ hours from the Glieshof. There was nothing to be seen, for a north-west wind was whirling the snow furiously all round them. The descent lies over the Steinschlag Ferner, keeping near the south side. After about an hour the glacier is left close to a little tongue of ice, which flows over the south rim, and is visible from below. There is a short bit of steepish rock, and then grass-slopes to Kurzras, which is reached in about 6 hrs. walking from the Glieshof. Josef, who, as a professional Jäger, knows every inch of the upper Schnals-*Thal*, said that, to the best of his belief, no tourist had ever crossed this pass. It deserves to be known, for in fine weather it must from its position command a view of almost the entire valleys of Matsch and Schnals. The Schwemser Spitze (11,335) can be reached from the Joch without difficulty.

Adamello Group.

BOCCA DI PRESANELLA (about 10,350 feet); PASSO D'AMOLA (about 10,530 feet); PASSO DI CORNISELLO (about 10,580 feet).—*September 6.*—Messrs. R. Gaskell and M. Holzmann, with Rudolf Kaufmann of Grindelwald as guide, established the practicability of three new glacier passes between Val Rendena and Val di Sole, of which they had obtained some glimpses three days before whilst crossing the Passo di Cercen and making the ascent of Monte Cercen. They left Pinzolo by the Campiglio road, entered Val Nambrone, and shortly after turned to the left into Val d'Amola, ascending the latter first on the right bank, later on the left, until they came to the huts in the basin of the Vallina d'Amola. Instead of proceeding to the apparent head of the valley, they turned to the right and followed a track on the left bank of the torrent to an upper recess of the valley, where they once more proceeded westward to the foot of the Amola glacier. They then ascended the moraine and walked up the almost level glacier, afterwards over a gently sloping field of *névé* to the deep gap between the Pressanella and Cima d'Amola, reaching it in 5 hrs. 25 min., exclusive of halts. (The gap is known to the Pinzolo guides by the

name of the Bocca di Presanella, although none of them professed to have either reached or crossed it. Judging from Payer's map, attached to his paper on the Adamello and Presanella groups in 'Petermann's Mittheilungen,' it would appear as if he had touched the Bocca di Presanella; but he undoubtedly had mistaken the ridge which separates the Nardis and Amola glaciers for that which cuts off the latter from the Presanella glacier. The supposition that his Punta Nera might be the Cima d'Amola cannot be maintained, as there is no Monte Bianco between it and the Presanella, the summit of the latter rising immediately to the west of the Bocca.) The party descended to the Presanella glacier, and, having crossed two bergschrunds, turned to the right, and kept close under the rocks in order to avoid as much as possible the crevasses and seracs into which the upper Presanella glacier is broken up. In 1 h. 10 min. from the pass they arrived at the foot of some rocks which support the most north-easterly branch of the Presanella glacier, and cut it off from the main mass. From this point the descent to the highest chalet in Val Stavel appeared to present no difficulty. By reascending along the southern edge of that branch, they came in 43 min. to a broad depression in the main ridge on the north-east side the Cima d'Amola, for which they suggest the name of Passo d'Amola, whence an arm of the Amola glacier slopes gently down towards the principal ice stream. Instead of descending, the party once more turned to the left, and ascended towards a gap in the rocky ridge to the north, reaching in 13 min. the Passo di Cornisello (as they propose to call it), on the other side of which the large *névé* basin of the Cornisello glacier stretches down into the valley of the same name. From a little rocky eminence which forms the corner-stone of the Presanella, Amola, and Cornisello glaciers, a very fine view may be obtained. (It would be possible to gain the *névé* basin of the Cornisello glacier from the Val Stavel a little more to the north, by ascending the rocky slope south-east of the highest chalets in the valley, without touching the Presanella glacier and without going to the Passo d'Amola.) The descent was made to the foot of the Cornisello glacier in the direction of the Lago Vedretti, thence down a couloir on the south side of the lake to a large accumulation of avalanche snow fallen from the Cima di Cornisello, and along the stream to the upper Lago Cornisello. Following the track on its north side, and past the lower lake, the party came to some chalets at the edge of the precipice, then turned sharply to the right until they reached some lower chalets, and bending to the left descended in steep zigzags into Val Nambrone, and returned in 3 hrs. 25 min. to Pinzolo.

Brenta Group.

CIMA D'AMBIES.—*September 5.*—The same party made the first ascent of this peak, the immediate southern neighbour of the Cima Tosa. Having ascended to the Bocca dei Camuzzi from Pinzolo by the Malga Bandaloro, the head of Val d'Agola and the Fiorito glacier, they moved up thence towards a couloir filled with snow, which splits the peak into two unequal halves. Mounting this couloir to within a few

feet of its upper end, they took to the rocks on the left to reach a large patch of snow on the west face of the mountain, passed just below that patch a short distance beyond it, and then went in zigzags up the rocks to the summit. Time, exclusive of halts, 5 hrs. 15 min.; from the Bocca dei Camuzzi 1 hr. 10 min. Having in 45 min. returned to the Bocca, they descended into the Val di Brenta, walked down the valley, and back to Pinzolo in 3 hrs. 45 min. more. The peak, known to the Pinzolo guides as the Cima d'Ambies, is not named on the Austrian Ordnance Map, and the height of 3,026 mètres assigned to the Punto Fiorito is evidently erroneous, as that summit is considerably lower. The figure might perhaps belong to the Cima d'Ambies, although it seems to be overtopped by the Cima Tosa (3,179 mètres) by less than 200 feet.

Dolomites.

MONTE SIARA (about 8,100 feet).—*September 23.*—Mr. M. Holzmänn, with Santo Siorpaes as guide, made the first ascent of this peak, which is the most conspicuous summit on the south side of the valley of Sappada. Leaving the Stella d'Oro inn at the Borgata Hoefe of Sappada, they crossed the Seris torrent below the village and followed the track which runs up to the north base of the mountain. A path there turns to the right, enters, partly with the aid of ladders, Val Seris, and leads to a large malga close to the pass connecting Sappada with the Canale S. Canziano. Here they faced to the north-east and went up to a broad ravine enclosed by the two principal ridges which Monte Siara throws out towards the south and south-west, until they arrived at the foot of a couloir in the ridge on the left hand. Ascending either in the couloir itself or by the rocks on the right or left, as the nature of the ground required, they came to the crest of the main ridge overlooking the valley of Sappada, and, once more turning up to the left, soon reached the summit. Time, exclusive of halts, 3 hrs. 50 min. The view includes the whole chain of the Tauern, all the principal Dolomites, a considerable extent of the Adriatic, the Terglou group, &c. The party descended by the same route for 25 min., quitted the couloir on its east side, went across some sloping rocks covered with débris until progress was arrested, and then entered another couloir which seemed to offer fewer obstacles than the one followed in the ascent. The malga was reached in 1 hr. 20 min. and Sappada in 50 min. more.

TERZA GRANDE (8,472 feet).—*September 25.*—The same party ascended this peak, which is better known to the people of Sappada by the name of Pilichen. Crossing the Seris torrent below Granvilla di Sappada, and immediately after also the Rio Crum, they followed the track which leads up the left bank of the latter, leaving the path only near the head of the valley in order to get to the crest of the ridge which separates it from Val Frisone, at the point where the rocks of the Terza Grande join the ridge. They then turned nearly due north and ascended over easy rocks to the summit. Time, exclusive of halts, 3 hrs. 45 min. Having found on the top an old stoneman and a pole, they made inquiries and were told that the peak had been ascended

about sixty years ago by the Austrian engineers on the occasion of making the Lombardo-Venetian survey; but there seems to be no account published of a previous ascent. The descent was slightly varied on the lower part of the rocks by going down more towards the east, instead of returning to the crest of the ridge. Sappada was reached in 2 hrs. 35 min. from the summit.

MONTÉ GHEU (about 8,100 feet).—*September 26.*—The same party made the ascent of this peak, which, from the summit of Monte Siara, had appeared to be slightly higher, but which an aneroid showed to be of equal height, perhaps even by a few feet lower than that mountain. They crossed the Seris a little to the east of Fontana di Sappada and followed a track, the main direction of which runs south-east through the forest up to some slopes of débris on the eastern side of Monte Siara. They quitted the path which traverses these slopes before it reaches the base of some rocks, and went up the slope and then a couloir in which it terminates. Arriving at the head of the latter, they were surprised to find a broad valley between them and Monte Gheu. This valley, called Val Gheu, is only imperfectly indicated on the maps, and its drainage joins the Degano torrent to the south-east of Cima di Sappada. The party had to descend by a couloir into Val Gheu and to cross the valley to reach the base of a broad ledge, covered with débris, which runs up along the whole north face of the peak. Having mounted to the eastern end of this ledge, whence a slope of débris and grass stretches down into a lateral glen of the Canale S. Canziano, they turned to the right and walked up to the summit. Time, exclusive of halts, 3 hrs. 20 min. Returning by the same route to the foot of the couloir on the north side of Val Gheu, the party, instead of reascending it, turned to the right and went nearly on the same level, first to the eastern side of the rocks, and then, wheeling round to the left, to their north side, descended to the slopes of débris, and returned to Sappada in 1½ hr. from the summit.

CINQUE TORRI OR TORRI DI AVERAU (c. 7,700–8,000 feet).—*September 17.*—The first ascent of this bold isolated pinnacle of rock near the Nuvolau was made by Mr. C. G. Wall, with Giuseppe Ghedina di Angelo, mainly by means of a great chimney partly choked up with huge boulders on the west face.

PASSO DI CUNONEGA.—*July 11.*—Mr. D. W. Freshfield with François Devouassoud crossed the gap between Il Piz and the Sasso di Mur, leading from the head of the Val Asinozza to Val Canzoi and Feltre (see p. 69).

ALPINE NOTES.

MOUNTAINEERING IN SOUTH AMERICA.—An Extraordinary General Meeting of the Club (in place of the ordinary February meeting) will be held on Tuesday, February 1, 1881, for the purpose of receiving Mr. Whympster on his return from South America, and of hearing a lecture by that gentleman on his ascents of Chimborazo. The partial

summary of his splendid achievements, published in the present number of the 'Journal,' will give our readers some idea of the extreme interest and importance of his adventurous explorations, which mark an epoch in the history of mountaineering. Further particulars as to place and hour will be given in the circulars sent to the members of the Club in December.

WINTER MEETING AND DINNER.—The Annual General Meeting of the Club will take place on Wednesday, December 15, and the Winter Dinner and Exhibition of Alpine Paintings at Willis's Rooms on Thursday, December 16.

MISCONDUCT OF A GUIDE.—The Editor has received the following letter, which needs no comment:—

'Dear Sir,—Perhaps, for the protection of other travellers, you may think it expedient to give publicity to the treatment I experienced at the hands of a guide of the name of Alexander Leugen, of St. Niklaus, near Zermatt. I engaged the man in question (on his assuring me that he knew all the principal passes between Zermatt and Chamonix) to take me by what is called the 'high level route' from the former to the latter place, on the terms of 20 francs per day for the passes and 8 francs for the other days. The first day I went as far as the Stockje hut on the Zmutt Glacier (8½ hrs.), the second and third days over passes, arriving at Bourg St. Pierre on the morning of the third day, and going up in the afternoon to the St. Bernard Hospice, with the intention of going the following day to La Folie Inn at the foot of the Col d'Argentière, which pass I intended to take to Chamonix the day after that. On arriving at the hospice, my guide informed me that he did not feel competent to take me over the Col d'Argentière, and that the only pass he knew over the Mont Blanc range was the Col du Géant from Cormayeur. As it would have been too far to go to Cormayeur, I had nothing for it but to go round by Martigny, where I dismissed the guide as incompetent. I offered him for pay 70 francs, viz., 20 francs each day for the two passes, 8 francs each for the days to the Stockje, and from the St. Bernard to Martigny (half of which we had driven), and 14 francs for the return journey. He refused to take this, but insisted on being paid 20 francs for each day and 16 francs return money, in all 96 francs. I offered to pay him the 70 francs and refer the matter to Mr. Seiler, on my return to Zermatt the following week; but this he also refused, and on my then refusing to pay anything until I returned to Zermatt and consulted Mr. Seiler, he raised his ice-axe and threatened to strike me with it unless I paid all he asked at once. On my return to Zermatt, Mr. Seiler and all the leading guides were very indignant at the treatment I had received, but as there is no regular organisation of the guides at Zermatt, and so no direct way of punishing the man, I am afraid unless you take the matter up, others may suffer in similar manner at the hands of this man, who is evidently unfitted for the office of guide. I think it only fair to add that, though I was over two months at Zermatt this summer and employed at various times more than a dozen different guides, on no other occasion did I receive anything but the greatest civility. Your obedient servant,

'W. H. WILSON FITZGERALD.'

TRACES OF GLACIERS IN NORTH AMERICA.—Mr. P. Watson writes :—

‘ Whilst travelling in Canada and part of the Eastern States this summer, I observed several traces of ancient glacier-action. I walked up the hill immediately behind and overlooking Montreal and the surrounding country. On the brow above the town where the rocks were clear of grass, they were polished and striated exactly as we find in parts of the Alps where glaciers once were, and similar to the evidence of ancient glaciers amongst the hills of Cumberland and Wales.

‘ The hill above Montreal is the highest one anywhere for many miles around. I had not time to extend my walk to the park and cemetery, which are rather farther on upon the same hill.

‘ In travelling by railroad through the States of Vermont and New York I also noticed in several places, on the right hand side of the way between Rutland and Saratoga, similar traces close to the railroad, and extending at frequent intervals for a few miles. They are so plain that there was not the least difficulty in recognising them as the train passed in which I travelled. The country there is undulating and beautifully wooded in many places, and situate between the Adirondack and White Mountain ranges.

‘ My time in the States was limited and chiefly occupied in travelling rapidly, and I could not make close investigations.

‘ I may be giving “stale news” to some of your readers, and, if so, must ask to be excused; but I have been encouraged to write on a subject which always interests Alpine men.’

ALPINE ACCIDENTS.—Herr Strasser, the Pfarrer of Grindelwald, writing on September 29, informs the Editor that, despite the efforts of numerous search parties, no traces have been found of Dr. Haller, Rubi and Roth, except those discovered by Messrs. P. Thomas and Powell. On July 25 (exactly a week after the accident) these gentlemen—who had with them Valais guides—(writes Mr. Thomas) ‘ found a crimson stain on the snow half-way up the wall of the bergschrund, on the Grimsel side of the Lauteraarjoch, at a place where a long stretch of snow had evidently given way very recently, and the broken neck of a bottle in the mass of snow which had choked the mouth of the chasm.’ These traces lead to the conclusion that the snow gave way with the party, and buried them in the bergschrund. It is improbable that anything more will ever be known of this terrible disaster.

Herr Strasser states that Inäbnit, whose back was so severely injured in the accident near the Roththal Sattel, is now able to get out of bed, and lie before his house in the sun, and does not suffer much pain; but it is very doubtful whether he will ever regain his former strength and health. He has a numerous family, and is in poor circumstances. A collection made at the Äggischhorn, assistance from Herr Göhrs, and the contributions of the Zürich section of the Swiss Alpine Club, have done much to relieve his immediate wants; but Herr Strasser appeals for subscriptions—and we are sure he will not appeal in vain—from former employers of Inäbnit amongst ourselves. It is only due to Herr Göhrs of Strassburg, Inäbnit’s employer at the time of the accident, and to the memory of his comrade Rubi, to call particular attention to their most unselfish and praiseworthy conduct under very

difficult circumstances. From 9 A.M. to 7 P.M. the two uninjured members of the party either dragged Inäbnit along the glacier, or supported his faltering steps. They had to allow him to rest every ten minutes, and only reached the Concordia Hütte at night after long exposure.

The following is a list of subscriptions to the Rubi-Roth fund, collected by Messrs. Hartley and Hulton. Any subscriptions for Inäbnit should be sent direct to Herr Strasser.

	£	s	d.		£	s	d.
C. Pilkington, Esq.	1	0	0	Brought forward	56	10	0
L. Pilkington, Esq.	1	0	0	W. W. Simpson, Esq.	2	0	0
W. C. Smyly, Esq.	2	0	0	F. J. Cullinan, Esq.	2	0	0
C. F. Wright, Esq.	1	0	0	M. Holzmann, Esq.	3	0	0
Edward Bibby, Esq.	1	0	0	George E. Foster, Esq.	5	0	0
John Heywood, Esq.	2	2	0	A. H. Cawood, Esq.	0	10	0
William Currey, Esq.	3	3	0	D. W. Freshfield, Esq.	2	0	0
Miss L. B. Currey	1	0	0	A. W. Moore, Esq.	1	0	0
J. McDonald, Esq.	1	0	0	Mrs. C. J. Leaf	2	0	0
Mrs. McDonald	1	0	0	Walter Leaf, Esq.	2	0	0
Bernard Hartley, Esq.	1	0	0	G. Yeld, Esq.	1	0	0
H. S. Hoare, Esq.	5	0	0	H. E. Burgess, Esq.	1	1	0
Fras. E. Wilson, Esq.	3	3	0	F. Kelly, Esq.	1	1	0
T. Middlemore, Esq.	1	1	0	Herbert Thomas, Esq.	1	0	0
H. Schütz Wilson, Esq.	1	1	0	C. Haigh, Esq.	5	0	0
Miss S. Walker	0	10	0	H. G. Willink, Esq.	1	0	0
T. S. Kennedy, Esq.	1	0	0	Rev. F. T. Wethered	0	10	0
J. H. Kitson, Esq.	5	0	0	J. B. Colgrove, Esq.	1	1	0
Collected by E. Hulton, Esq.—				M. Cannon, Esq.	1	1	0
E. Hulton, Esq.	5	0	0	W. M. Conway, Esq.	0	5	0
Mrs. W. A. Hulton	1	0	0	A. C. Vesey, Esq.	0	5	0
Mrs. J. Matthias	1	1	0	W. A. B. Coolidge, Esq.	1	1	0
Miss M. C. Hulton	1	1	0	J. Eccles, Esq.	5	0	0
H. Walker, Esq.	2	0	0	— Grüber, Esq.	4	0	0
F. Gardiner, Esq.	1	1	0	J. Baumann, Esq.	1	0	0
F. C. Hulton, Esq.	5	0	0	G. F. Vernon, Esq.	1	0	0
J. Heelis, Esq.	1	0	0	W. E. Davidson, Esq.	3	0	0
F. T. Pratt Barlow, Esq.	3	3	0	A. D. Puckle, Esq.	1	1	0
Hugh Stirling, Esq.	1	1	0	J. W. Hartley, Esq.	5	0	0
F. A. Wallroth, Esq.	3	3	0				
Carried forward	56	10	0		110	6	0

VAL LARSEC.—Mr. Ball, in his notice of the Faassa district, justly calls attention to the grandeur of the rock scenery of Val Vajoletti, but there is another, in close proximity to it, which perhaps even surpasses it in this respect, and yet seems to be almost unknown to both travellers and guides. It is the Val Larsec, situated high above the eastern side of Val Vajoletti, and hemmed in on the west and south by the Dirupi di Larsec, on the east by the Lausakogel, and on the north by a high barrier of rock which separates it from the Lago d' Antermoja. Having already become aware of its existence in 1877, when crossing with Mr. R. Gaakell the Tchager Joch, and having obtained a bird's-eye view of it a few days later on making with him the ascent of Lausakogel, I was induced to visit it last September, accompanied by Giorgio Bernard, of Campidello, who, up to that time, had not entered it. It is a veritable 'cirque,' as its drainage has to

find a subterranean outlet; but its most striking feature is formed by a large number of stupendous couloirs and gorges which cleave the rocks of the Dirupi di Larsec and descend into Val Vajoletti, whence, however, their existence is hardly perceived. We went to the upper end of Val Vajoletti, turned, on arriving under the precipices of the Kesselkogel, sharply to the right, and ascended towards a depression in the ridge to the south-east. We thus came to the head of Val Larsec, and passed down it along the rocks of its right side, so that we were enabled to inspect the several couloirs already mentioned. Although we had been informed that a track led through one of the latter, we were unable to find it, and selected for the descent the most easterly couloir, immediately under the wall of the Lausakogel. We experienced some difficulty in getting into its trough, and had several exciting scrambles before we reached its lower end. It therefore seems advisable to enter the glen from the lower part of Val Vajoletti by the second couloir (counting from the east), through which the track is said to ascend, and to leave it either by the slope at the head of the valley, or over the rocky barrier on its north side, so as to visit the Lago d' Antermoja at the same time. M. HOLZMANN.

THE 'OLD MAN OF SKYE.'—'The Old Man of Skye,' the true summit of Scour Dearag, one of the highest of the Cuchullin Hills, Isle of Skye, was climbed for the first time by Messrs. C. and L. Pilkington on August 18 last.

The morning being misty, the guide of Sligachan Hotel was taken. The mountain was ascended from the head of Loch Coruisk, and the eastern base of the pinnacle reached—an upright slab of rock about 150 feet high, sheer on both sides and at one end. It was climbed from the eastern end, the only possible way up. Leaving the guide at the foot, they reached the top after a short and difficult climb, the edge of the slab averaging only a foot wide, and being very steep and shattered. No traces of any previous ascent were found, and the quantity of loose rocks which had to be removed on the ascent confirmed the statements of the guides, that hitherto all attempts to reach its summit had been unsuccessful.

The Ordnance surveyors built a cairn on the second summit of the mountain, some distance to the north west of the pinnacle, and about 70 feet less in altitude, and gave the name of 'Inaccessible Pinnacle' to the true summit.

COL DES HIRONDELLES.—The Rev. F. T. Wethered, who effected, last July, with François Devouassoud and a porter, what is believed to be the second passage of this col, writes:—'I am anxious to confirm Mr. Stephen's recommendations of this col. It is the *direct* passage between the Montanvert and Italy, and affords the most interesting rock-climbing I know of on any pass. We found the bergschrund very difficult to cross. The rocks to the left of the great couloir seen from the Montanvert afford excellent foot and hand-hold. Care should be taken to keep well to the left in descending the Freboutzie glacier. The views cannot compare with those from the Col du Géant, but the pass affords much more interesting climbing than that well-known col. It may be noted that three points in the watershed between

France and Italy have been named Col des Grandes Jorasses, viz. the point reached by Mr. Millman's party,* and Mr. Middlemore's pass, both between the Grandes Jorasses and the Mont Mallet; and, in the original note of the Col des Hirondelles, it was called 'Col des Grandes Jorasses.'†

THE ZERMATT POCKET-BOOK.—We understand that Mr. W. M. Conway will shortly publish, through Mr. Stanford, a pocket-book, which will contain brief descriptions of all the peaks and passes between the Simplon and Arolla. All the various routes made up to the end of the season of 1880 will be noted, and full references given to the literature of the subject, much additional information being supplied from private sources.

VAL DI GENOVA.—The building of the 'Leipziger Hütte' has caused the existence of the travellers' hut at Bedole to be almost forgotten. The Trentino Club, after building it, ceased to take any further interest in it. It is bare of all furniture except the usual bed place, but it is very large, and thoroughly weather proof. I was informed last July by the Pinzolo guides that it would be fitted up by next year; but even as it is its situation is so much more convenient than that of the 'Leipziger Hütte,' that it is preferable as a resting-place. Few mountaineers know how grand the extreme upper end of the Val di Genova is beyond Bedole. They either ascend by the path to the 'Leipziger Hütte' or go towards the Presanella. The woods extend almost to the foot of the Mandron glacier, and several waterfalls not seen from Bedole will bear comparison with not a few of those lower down. There is another path which crosses the infant Sarca at Bedole, and follows the right bank of the stream to a place called Monte Materott, near the foot of the Lobbia Glacier. This is rougher than the way to the Mandron, but is equally fine. There is a path on the right bank of the Sarca from the sawmills to the little hamlet of Tedesca, which should certainly be taken in preference to the direct path on the left bank. It is a trifle longer, but gives fine views of two waterfalls, which can be seen from the left bank, and it is nearly all in shade, no small advantage on a bright day.

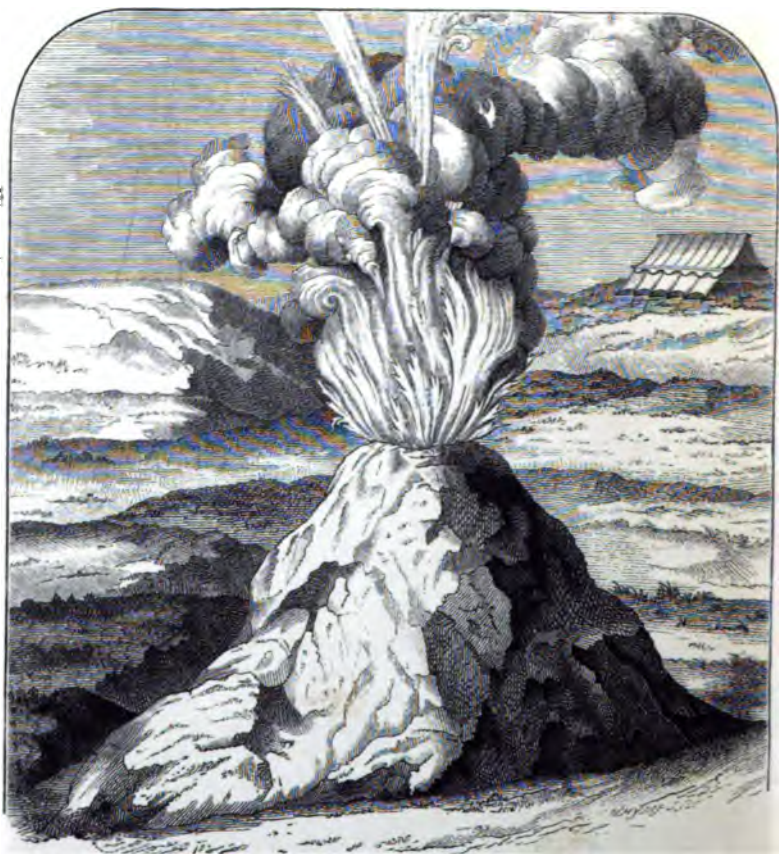
H. B. GEORGE.

INN NEAR THE GLACIER D'ARGENTIÈRE (A. J. ix. 497).—This inn, about 3 hours from Argentière, was opened last summer. It is said to be very clean and comfortable, and to possess two good beds. The landlord is obliging and the charges are reasonable.

* *Alpine Journal*, vol. i. p. 430.

† *Ibid.* vol. vi. p. 351.

The Editor has to acknowledge the receipt of many Alpine publications. All reviews and notices are postponed to the next number owing to press of matter.



COTOPAXI, AS IT APPEARED WHEN IN ERUPTION IN 1743.

From Juan and Ulloa's 'Voyage Historique de l'Amérique Méridionale, 1782.'

THE
ALPINE JOURNAL.

FEBRUARY 1881.

EXPEDITIONS AMONG THE GREAT ANDES OF ECUADOR. 2.

Jan. 17, 1880.—The 'tambo' of Chuquipoquio was left for the town of Ambato. Mr. Whympers being unable to ride, the Governor of Ambato sent eight Indians with a litter for him, and two soldiers, who were termed 'a guard of honour.' As a bill was afterwards presented for their services, 'guards of honour' were declined for the future.

„ 18–24. *At Ambato.*—Called in Dr. Abel Barona, who treated the sick men of the party skilfully. Ambato is a town with a permanent population of, perhaps, 5,000 souls, but on market days people flock in from the surrounding country, and 5,000 to 6,000 persons can be seen in the Plaza alone. It is a livelier place than Guaranda, somewhat less elevated above the level of the sea, and considerably warmer. Temperature during the daytime rose above 70°, and at night scarcely fell to 60° Fahr. It is extremely well provided with fleas, particularly on market days.

„ 24. *From Ambato to Iatacunga.*—These towns are about twenty-four miles apart, and the road from one to the other leads through a country of the most dreary description — almost treeless. The great mountains, Tunguragua and Cotopaxi, when visible, present a very imposing appearance from this direction. They are, however, seldom seen, and the eye has few objects to rest upon except naked aloes. The road is exceedingly sandy and dusty, though upon the whole it is good for Ecuador. An omnibus

leaves Ambato for Quito every Tuesday at midday, arriving at its destination about 4 P.M. on Wednesday. Fares, 8s. 6d., 17s., and 1l. At Latacunga, in the centre of the town, there is a decent hotel kept by Pompeyo Baquero. This place is 9,170 feet above the sea, and has frequently suffered from eruptions of Cotopaxi, which is about twenty miles distant from it.

Jun. 25. From Latacunga to Machachi.—This was again a part of the Quito road. The country becomes more and more dreary as Cotopaxi is approached, and continues exceedingly uninteresting until the Tiupullo ridge is crossed (11,700), which divides the basin of Latacunga from that of Machachi.

From the summit of the Tiupullo ridge there would be very fine views if the mountains were clear, as from it Tunguragua might be seen to the south, Ruminahui and Cotopaxi to the east, Illiniza to the west, and Corazon, Pichincha, Cayambe, and Pasachoa more or less to the north. This ridge was crossed several times by Mr. Whympers's party, but the views were never seen free from clouds.

The descent on the plain of Machachi passes through comparatively agreeable country, and the town (9,800 feet) is well situated as a centre from which to make expeditions to the Great Andes. More than five weeks were at one or another time passed here, at the 'tambo' kept by Antonio Racines, an Ecuadorian, who treated the strangers with great attention, and who deserves to be pointed out as an exceptionally fair-dealing man.

„ 26. *At Machachi.*—Occupied in getting our rooms into a habitable state. Had all the things turned out of them and the floors well scrubbed. The matting of the room was beaten for the first time since the house had been built, and this was regarded as a most extraordinary spectacle. Crowds assembled to see the performance.

„ 27. *At Machachi.*—Louis Carrel was still unable to walk. Mr. Whympers and J. A. Carrel went out with the idea that they could ascend Corazon in a short day. Found that they were mistaken, and they did not get within 2,000 feet of the top, although they were out ten hours.

Throughout the whole stay in Ecuador distances

were constantly underrated. At first, when it was supposed that an object was a mile distant, it was generally found to be $2\frac{1}{2}$ to 3 miles off, and even at the end of the journey estimates were usually 50 per cent. too low. The lower slopes of most of the mountains are of enormous length, and three to four times as long as similar slopes in the Alps. Thus a moderate-sized patch of forest on them looks at a little distance like a clump of bushes; great and impassable ravines appear mere ditches, and ordinary-looking grassy slopes are found on close approach to have grass growing five or six feet high.

- Jan. 28. *At Machachi*.—Very much rain fell yesterday and to-day, and there were thunderstorms every day that was spent in the town. Arranged to start J. A. Carrel off to-morrow to make a close inspection of Illiniza, a mountain which seemed hopelessly shrouded in mist, and was said to be seldom or never perfectly clear.
- „ 29. *At Machachi*.—J. A. Carrel went off at daybreak to try and find a camping-place on the northern side of Illiniza. Received a visit during the day from a civil engineer in Government employ named Lopez, who gave much information, almost all of which proved afterwards to be fiction. In one respect he spoke truly—namely, that the weather which was now prevailing was much the same in all parts of the mountains, and was likely to continue with little difference for several months, after which there would be less rain and more wind and dust. It became evident that it was useless to wait for fine weather, and that, if ascents were to be made at all, it would be necessary invariably to camp out at the very highest attainable points, and to wait until breaks in the weather permitted dashes to be made at the summits.
- „ 30. *At Machachi*.—Went out to inspect a hot spring to the east of the town. J. A. Carrel returned in the course of the afternoon, and reported that, so far as he could see, the highest peak of Illiniza was all but inaccessible on the northern side. It was determined to wait until Louis was able to put his feet to the ground, and then to return over the Tiupullo ridge, to examine its southern side.
- „ 31–Feb. 1. *At Machachi*, collecting, and measuring 17,000

feet on the road as a base for angles. Prepared for an ascent of Corazon, and left at midnight for it with J. A. Carrel and a native of Machachi named Lorenzo.

- Feb. 2. Ascent of Corazon.*—Our Ecuadorian professed to have ascended Corazon, and we let him lead until it was evident that he knew nothing whatever about the upper part of the mountain. He took us round to the western side (invisible from Machachi), and we found there a series of cliffs of a very difficult and rotten character, from which stones fell abundantly. After having got higher than 15,000 feet, we returned round the southern side, and then essayed to climb the cliff facing Machachi, and succeeded in doing so, arriving on the very highest point soon after midday. Our Ecuadorian could not be induced to accompany us, and he remained below drying his trousers. We remained on the top several hours, built four cairns on the summit ridge, and erected a large flag; and in returning made direct for Machachi, arriving there shortly before 8 P.M., having had a day of twenty hours, out of which less than two were spent in halts.

The height of Corazon is very nearly 16,000 feet. Its ascent was the easiest one which was made in Ecuador, with the exception of Pichincha; and to those who know the best way of making the ascent its difficulties are very moderate. It afforded, however, several surprises. At a distance, from the direction of Machachi, it looked a very insignificant affair—an afternoon walk—but when the final peak was approached closely it appeared quite inaccessible. Finding that the western side was very dangerous on account of falling stones, we returned to the eastern side, and when we got fairly up to the foot of the cliff which faces Machachi we found, to our surprise, that it was easy to scramble up it, although the scramble was a steep one.

On the western side there are probably some permanent snow-beds in the couloirs, but all the other sides were frequently entirely free from snow, so that this mountain scarcely enters the 'snow-line.'

- „ 3-6. *At Machachi.*—J. A. Carrel went to Quito for money and stores, and the others were occupied in preparation for Illiniza.

- Feb.* 7. Started this morning from Machachi (leaving there the bulk of the stores) with the Carrels, Perring, four natives, and a train of mules for Illiniza. Returned across the Tiupullo ridge, and then bore away to the west to a farm called Hacienda de la Rosario, which was the nearest house to our mountain. Passed the night there.
- „ 8. *From Hacienda de la Rosario to Camp on the South Side of Illiniza.*—Started about 9 A.M. with all the company, and with great labour got all up to the edge of the southernmost glacier of Illiniza by 3.30 P.M. The slopes were sandy, and the mules could scarcely be induced to come up the last few hundred feet. Encamped there at a height of 15,300 feet, and sent all the people, except the Carrels, along with the animals back to the *hacienda*.
- „ 9. *First Attempt to ascend Illiniza.*—Louis Carrel was still unable to walk, and was left in charge of the camp while the two others started for the summit. Started at daybreak, went to the head of the glacier easily (few crevasses), and then took to an arête leading continuously to the highest point of the mountain. This was much broken up; the rocks were frequently loose, and they were interspersed with numerous snow-beds, which almost always overhang one or the other side in cornices. Progress was slow and difficult, and at midday, having then attained a height slightly above 17,000 feet, it was brought to an end by arriving at the foot of the final peak, which here consisted of a vertical section of glacier. The summit was not seen until the explorers arrived at the foot of this obstacle, having been shrouded in mist the whole time. There was no possibility of getting higher on this side except by tunnelling through the ice; and as this was out of the question for two men, and as the eastern and western sides were equally abrupt, it was obvious that there was no means of getting to the summit except from the northern side, which Carrel had previously pronounced all but inaccessible. Commenced descending soon after 1 P.M., and arrived at the camp about 4, having dense mist almost all the way, and not being sure that we should hit off the camp until we arrived at it, as the track on the glacier was nearly obliterated. Mules arrived at the camp about the

same time, and we all went down to the *hacienda*, arriving there at an advanced hour of the night.

Feb. 10-13.—On the 10th we returned to Machachi, and until the 13th were occupied with preparations for Cotopaxi, as there seemed no chance of getting a clear view of Illiniza, which remained almost always covered with clouds. The weather was bad during all these days, and much new snow was seen on all the tops whenever the clouds broke.

„ 14. *Machachi to Hacienda Pedregal.*—The day commenced fine, and we flattered ourselves that at last a change for the better had occurred. Besides the Carrels and Perring, our party consisted of six natives as porters, three arrieros, nine mules, and two sheep. The course away from Machachi led at first nearly due east, over a sort of pass between the mountains Ruminahui and Paschoa. In three hours and a half we arrived at the farm and collection of huts called Pedregal, and halted there to allow stragglers to close up, being at that time minus three porters, one arriero, one interpreter, and one sheep. Whilst halting a violent rainstorm came on, and rendered it impossible to proceed further that day.

„ 15. *From Pedregal to First Camp on Cotopaxi.*—This morning we proceeded on our way, making a straight track in a southerly direction towards Cotopaxi, that is to say, going nearly at right angles to yesterday's course. We made for the western side of the mountain, to avoid the easterly winds which are almost constantly blowing hereabouts, and after being well drenched in heavy rainstorms encamped somewhat higher than 15,000 feet above the sea, having had great difficulty in getting our animals up the last few hundred feet in consequence of the looseness of the sandy slope. Sent back the arrieros and all the beasts directly their loads were taken off.

We selected the direction which we followed because we believed it to be the best line which could be taken, and without reference to any other ascents which had previously been made. We derived no assistance from our natives, who were profoundly ignorant respecting other travellers who had been in this district. It was, therefore, curious to find subsequently that we had taken the exact line which was followed by Baron von Thielmann about two

years before, and had encamped within a few yards of the position he selected. We found a bottle containing his card at a short distance from the place where our tent was pitched. A good thousand feet lower there were traces of another encampment, but by whom made we were unable to learn. After we had settled down we heard occasional rumbles inside Cotopaxi. They were scarcely more alarming than the noise of a door slammed in a distant part of a large house. Snow fell nearly all night.

Feb. 16. At the First Camp on Cotopaxi.—All the time during which we had been in the neighbourhood of this mountain I had studied it on such occasions as it was visible, and had remarked that, although during the daytime it emitted ceaseless clouds of smoke or steam, during the nighttime it was almost always tranquil; and had concluded that we should very likely be able to see well into the crater if we could pass a night on the summit. The great height of the mountain, the want of protection from weather, and the possibility of being surprised by an eruption were all matters which had to be taken into consideration, and preparations had been carefully elaborated before leaving Machachi.

Despatched the Carrels and two Ecuadorians upwards at 8.30 A.M. with the second tent, 250 feet of rope, eight days' provisions for one man, and a variety of etceteras. Sent Perring and the others downwards to collect wood and water, as neither was to be found anywhere near the camp. The first-named party returned at 6 P.M., having accomplished the mission, and deposited the goods near the summit. One of the Ecuadorians had given in after an hour's walking, and the other had stopped at the foot of the final cone. The second party returned at 2.30 P.M., and Perring was then sent back along with two natives, who preferred the attractions of Machachi to the slopes of Cotopaxi.

The weather was again abominable on this day. During the greater part of daylight either snow or hail was falling, and during the rest of the time there was fog or high wind. Min. temp. this night was 25° Fahr. With this temperature, and in total darkness, the remaining Ecuadorians carried on religious exercises for two hours.

Feb. 17. At the First Camp on Cotopaxi.—The others requiring repose, and the weather remaining unfavourable, we remained in camp. Much lightning round about us, accompanied by thunder. The summit was occasionally visible from the camp. Photographed it from two positions. Collected insects, plants, and rocks in the neighbourhood of our station. Got rid of another Ecuadorian, a skulker who was useless.

Heard scarcely any rumblings or noises to-day, though clouds of steamlike vapour were seen continually pouring out of the crater whenever the summit was visible.

„ 18. *Ascent of Cotopaxi. Encampment on the Summit.*—This morning was unusually fine, and the upper part of the mountain was free from clouds for several hours. Started off J. A. Carrel with two natives at 5.20 A.M., and followed with Louis at 6, catching the others at about 17,000 feet above the sea. We had fine views of Sincholagua, Antisana, and Cayambe as we went up, and spent time in examining them through a telescope, with a view to ascending them.

The route which we took led directly up to the summit from our camp, and may be best described by saying that we followed the crest of the ridge, which descends almost continuously from the summit towards the mountain Ruminahui. We scarcely deviated from a right line until arriving at the foot of the final cone, and it was then necessary to zigzag and to bear away slightly towards the south.

This, perhaps, is the best direction from which to make an ascent. We could, however, have followed the ridges next to us either on the north or south with almost equal facility. The whole of the party arrived on the highest point of the summit exactly at midday, having experienced no difficulties worth recounting. With the exception of the final cone (which was a combination of ash and ice), almost the whole of the ascent was made over snow. When between 18,000 and 19,000 feet high, the whole of the party (roped) went up 360 steps without stopping.

Early in the afternoon we despatched the natives back to the first camp, with instructions to return on the morrow, having previously been assisted by them in preparing a place for the tent. The camp was neces-

sarily established on the outside of the final cone, which at this part was entirely composed of ash. This was very warm to the touch, and was so exceedingly loose as to render it a matter of much trouble to fix the tent ropes securely. High wind springing up while we were encamping, we carried out four additional ropes and attached them to the largest stones which we could bury in the ashes. We then rigged up a rope as a sort of hand-rail from the tent to the immediate edge of the crater, from which we were distant 250 feet.

We had scarcely completed our preparations when a violent squall arose, which threatened to carry the whole establishment away. The poles bent and quivered, and the ropes dragged at and loosened their attachments. During an hour it was a great question whether our roof would weather the storm. The squall passed away as suddenly as it rose, and for the rest of our stay we were not much troubled by wind.

At intervals of about half an hour the crater regularly blew off steam, though no stones were ejected, or at least none were observed. The steam appeared to be very pure. It rose in a jet with great violence from the bottom of the crater and boiled over the edge, continually enveloping us. We sustained, however, scarcely any inconvenience from it, and this was the more remarkable since we had been well-nigh stifled with sulphurous fumes during the ascent when about 1,500 feet below the edge of the crater.

When night had fairly set in, we went up to view the interior of the crater, and saw the whole of its vast proportions for the first time. The lower part was illuminated by glowing fires, and one half of the upper cliff was brilliantly lighted by a nearly full moon. Little smoke was at this time rising, and it scarcely interfered with the view, whilst it heightened the effect. Min. temp. in night 13° Fahr., which was the lowest temperature observed during the whole journey.

In the morning we measured 600 feet along the western side of the crater, and took angles to gain an idea of its dimensions. Photographed it, and attempted to measure the depth by lowering a line; but both operations were marred—the former by the

phiné gained a temporary notoriety as the site of an apparently inaccessible mountain; but after the fall of the Meije the majority of the English visitors fled to return no more; and the astonishing fact was rendered possible that but three English-speaking visitors (and none of those three coming thither for the first time) had found their way during the late season, up to the middle of August, to the hamlet of La Bérarde, the natural centre of the district.

Two explanations of this strange want of curiosity are offered. It is said, in the first place, that in the French and Italian Alps the accommodation is so bad that it is impossible to put up with it. Now this would describe the state of matters fifteen or twenty years back, when these districts were *more* visited by English climbers than at present. But by this time matters have wonderfully improved in almost every portion of those regions (partly owing to the encouragement given by foreign climbers), and yet fewer English are found there than before, which, to say the least of it, is a fact requiring further explanation. It is then said, Oh it is all very well for *you* to go to these out-of-the-way parts to climb 'little peaks,' but *we* prefer to remain where there are 'real mountains,' which are worth the trouble of ascending. Now this view is, I think, quite fallacious, and indeed quite fatal to a true appreciation of the Alps, resembling, with an unpleasant closeness, Mr. Ruskin's celebrated greased pole theory. And here I must make my Alpine confession of faith, in which I trust no heretical doctrines are to be found. To my mind the difference between one mountain and another is merely one of degree and not of kind. I admit that I have a catholic love and admiration for all mountains big or little. Therefore I can appreciate the beauties of the Welsh hills, amidst which I am writing, as well as the sterner glories of Mont Blanc or Monte Rosa. I may, and candidly allow that I do, prefer a snow mountain to a snowless one; but this is simply a difference in the degree and not in the kind of delight with which they severally inspire me. So too between one snow peak and another. Everyone will allow that some of the most enjoyable days he has spent in the Alps have not been on the very highest, or, as they are now called, the 'first-class' summits. And this goes far towards establishing the doctrine of Alpine faith for which I am contending; once grant that the relative height of a peak is but an insignificant factor in the aggregate amount of pleasure derived from making the ascent, and my case is won. It is notorious that the highest peaks are by no means always the most difficult; and yet it is these which are most frequently

ascended, a fact which one can scarcely err in attributing to the more or less unworthy motive of wishing to be able to crow over other less fortunate individuals. Possibly my proposition, that the attraction of mountains does not vary with or depend on their relative height, may be admitted in theory as a truism, and ignored in practice with a sort of contemptuous pity for the poor mortals who have such a low respect for the Alps. I am willing to be pitied, provided I am allowed to take my own course, and to try to get converts to my way of thinking. But I have derived so much pleasure from my rambles amongst the unfrequented and relatively lower ranges of the Alps, that, at the risk of spoiling my own hunting-grounds, I feel bound to endeavour to get others to follow my example as an experiment, to see whether, as in my own case, the change from the familiar giants of Switzerland to the comparative pigmies of the south-western Alps is not an agreeable one, and one worthy of being more frequently tried.

Now, as compared with the Cottians, Dauphiné itself is crowded with English travellers. The Cottians, having the misfortune, as some would say, of possessing but one peak over 12,000 feet, have been all but utterly neglected by our Club. The peak just alluded to—Monte Viso—indeed was first conquered by Englishmen, but with that exception and an attempt on another summit, no mountainous part of this region has been hitherto visited by Englishmen, except hurriedly by Messrs. W. Mathews and Bonney, who have been the pioneers in so many other parts of the Alps. Having long gazed on these ranges from the Dauphiné peaks, I gradually became filled with a desire to know more of this mysterious region, as to which Mr. Ball himself could give but little information.* Hence I resolved to have a look at it in 1879, when on my way to the Maritime Alps. I should be inclined to fix the north limit of the Cottian Alps, from motives of convenience, at the pass of the Mont Genève, with all deference to Mr. Ball, who adopts the Col du Galibier and the pass of the Mont Cenis as his boundaries, though no doubt on scientific grounds these are the most suitable. Mr. Ball again places the south limit of this region at the Mont Enchastraye, whence many ridges diverge; but here again convenience points to the frequented pass of

* Much recent information may be found in SS. Martelli and Vaccarone's excellent '*Guida alle Alpi Occidentali del Piemonte*,' just published by Casanova of Turin, under the auspices of the Turin section of the Italian Alpine Club. Unfortunately this does not take in the French side.

the Col de l'Argentière or della Maddalena, as the frontier between the Cottians and the Maritimes. Adopting the boundaries which I suggest, we can, for clearness sake, distinguish three, or, taking Mr. Ball's definition, four groups within these limits, viz. :—

1. From Mont Genève to Monte Viso—the district of the *Vaudois valleys*.

2. *Monte Viso* and the immediately surrounding valleys.

3. From Monte Viso to the Col de l'Argentière, a region which may be called, from its highest peak, the *Chambeyron district*. To which we may add

4. The district between the Mont Genève and the Mont Cenis—the *Mont Thabor and Mont d'Ambin district*.

It is proposed to treat of each of these districts in a separate paper, and thus obtain space for an adequate description of this extensive and little known tract of the Alps, which during its entire length forms the frontier between Piedmont and France. The present paper will be devoted to the group numbered three in the list given above, as being the least known of all.*

Anyone casting his eye on a map of the south-eastern corner of France can scarcely fail to have his attention attracted by a remarkable affluent of the Durance, flowing in from the east, which runs for the latter half of its course almost at a right angle to the direction previously followed. This river is the Ubaye; it rises not very far south of Monte Viso, and its valley is bounded on either side by the mountains which I propose to describe in this paper. The principal summit in the range separating it from the Durance to the west is the Fond Sallette or Font Sancte (3,370 mètres=11,057 feet),† and those in or very near the ridge forming the Franco-Italian frontier (going from N. to S.) are the Grand Rubren (3,341 mètres=10,962 feet), the Aiguille de Chambeyron (3,400

* As this paper is meant to give a general idea of the district, it may be well for those wishing for minute topographical details and exact times, to refer to my notes, published in vol. ix. p. 346, sqq. of this Journal.

† The natural derivation of this name would be from the lake and chapel of S. Anne, at its north-eastern base, resorted to by the natives on July 26, S. Anne's day. It is worth noting, however, that Bouche ('*La Chorographie ou Description de Provence*,' 1664, Aix, i. 28) states that the old name of the Ubaye was Sanctio, as appears from a passage in the life of S. Marcellinus of Embrun ('*Acta Sanctorum*,' ed. 1675, April. ii. 753). There are other readings—Cusanctio and Consanctio.

mètres=11,155 feet), the highest summit between Monte Viso and the Mediterranean Sea, and the Brec de Chambeyron (3,388 mètres=11,116 feet). At the head of the valley is the commune of Maurin, of which the chief hamlet is Maljasset or Majasset; lower down is the flourishing village of S. Paul-sur-Ubaye, and just at the point where the Ubaye turns to the west is the small town of Barcelonnette or Little Barcelona. The valley forms the north-eastern corner of the department of the Basses-Alpes.

Climbers will not easily forget the enormous quantity of snow on the Alps in the early summer of 1879. This was especially troublesome on the rocky ranges of Dauphiné, and as the weather was very variable, I resolved, after nearly three weeks' trial, to seek warmer climes, and, after saying good-bye to my friends, Mr. Gardiner and Messrs. Pilkington, on their departure for their magnificent expedition up the Meije, I crossed the Col de la Temple from La Bérarde to Vallouise on July 21, and next day drove to Guillestre at the entrance of the Combe du Queyras. I was accompanied as usual by Christian Almer and his son Christian, now, though but twenty-one years of age, a most promising young guide. As we were due in the Maritime Alps I could not spare much time for the Cottians, but they proved so attractive that we spent a week among them instead of three days as I had intended. At Guillestre we found comfortable quarters at the Hôtel Imbert, whither I had been directed by my friend Monsieur Paul Guillemin, and I spent the afternoon very pleasantly in the examination of a parcel of letters and papers from England. We started about 8 A.M. on the morning of the 23rd for the head of the Ubaye valley, with rather vague ideas as to how we were going, but wishing to examine the southern face of the Fond Salette. Passing through pretty woods on the banks of the Rioubel torrent, and by some fine earth pillars, we got to the lonely hamlet of Escreins in time for a frugal lunch of mouldy cheese and black bread procured at one of the houses. Wonderful to say, this village has escaped the notice of Mr. Ball! To the west lies the Protestant valley of Vars; to the north-east between Escreins and the valley of Ceillac is the little known range of Henvières (3,273 mètres). To the east, two valleys unite not far from the village. We had intended to cross a pass indicated by Joanne through the more northerly of the two, the Vallon des Salettes, but suffered ourselves to be over-persuaded by the natives, and actually passed through the more southerly or Vallon Laugier. We had a fine view of our peak, though the topo-

graphy was not yet quite clear, and also of the peak where my friend Monsieur Salvador de Quatrefages met with so severe an accident this last summer.* Our pass, which, as hitherto unnoticed, we named Col du Vallon Laugier, was very easy, but rather tedious. After descending a short way on the Ubaye side, we learned from a shepherd that the valley down which we were merrily proceeding would lead us to a point in the valley far below Maljasset. So we tried a 'traverse' to the left, which led us over very steep grass slopes, followed by rocky slopes, to the Pont Voûté in the main valley. A long and dreary walk along the Ubaye brought us to the territory of the commune of Maurin, which is considerably higher than the rest of the valley. We were glad enough to get to Martréi's little auberge at the upper end of the hamlet of Maljasset, and directly after retired to the double-bedded guest chamber, and slept the sleep of the just, after a day which had been unusually fatiguing and 'pénible,' though we had not encountered the slightest difficulties on the way.

Next morning, Thursday, the weather was glorious, and as after breakfast it was too late to start for any high peak, I resolved to go up a point seen from the inn, and called by the people Pointe de Mary (3,129 mètres = 10,266 feet),† in order to get a general view of the surrounding ranges. The ascent was perfectly straightforward throughout, and the view most magnificent, extending as far as the Zermatt peaks. It is just the sort of mountain to fill up an off day, the total time occupied by the ascent and descent being only 3½ hours. Our chief attention was naturally paid to the Font Sancte and the Aiguille de Chambevron. A way was soon made out up the former, but the steep face of the latter above the Glacier de Marinnet, though seamed by several couloirs, did not look promising, and it was resolved to postpone the ascent until we had seen more of the other side. A great feature in the view, from this as from all other points in the district, is the grand sight of the Monte Viso, which towers up most majestically, and is only a few miles distant. Throughout our whole journey of six weeks in the Cottians and Maritimes, it was always our great landmark, and we were bitterly disappointed when, having reserved it to the end of our trip, we reached it by the new route from the north, and found ourselves enveloped in mist. The great height to which it rises above all the neighbouring ranges con-

* 'Bulletin du C. A. F.,' 1880, p. 74.

† It is well seen in the background of the photograph marked F at the end of the album mentioned in the next note.

tributes much towards the profound impression which it leaves on the mind. We spent a long time on the Pointe de Mary (Mary is only another form of Maurin), and returned in the late afternoon to the village. Maljasset (1,910 mètres = 6,267 feet) is the central of three hamlets, La Barge lying a little way lower down, and Combe Brémond a few minutes higher up the valley—each being visible from the other. They lie in a beautiful green valley of which the eastern slope is clothed with fine timber, and partly hollowed out into a marble quarry. From Maljasset itself none of the higher peaks are visible except the Rubren and the Panestrel (3,253 mètres), but a buttress of the Chambeyron called Tête de Miéjour, makes a grand show, as does also another point on the north slope of the valley. Between Maljasset and Combe Brémond stands the church with an inscription on the door recording its destruction by an avalanche on February 14, 1531. A niche in the churchyard wall marks the spot where the coffins of those who die during the winter are deposited until the return of spring makes it possible to dig a grave.* The commune being so distant from any other village has retained much of its individuality. By means of easy passes it communicates with Ceillac, Saint Véran (the highest village in Europe, 6,592 feet), La Chianale and Castel Delfino in the Val Varaita, and the Val Maira. This superfluity of passes is due to the position of the valley, which is pushed up like a wedge parallel to the main watershed of the Alps, and not, as is usually the case, at right angles to it.

On Friday we went up the Font Sancte, this being the second ascent, but by a new route. The way taken lay by La Barge, the Vallon Claus, and the eastern arête. An English party in 1865 reached this arête from the north side,† but, for some reason not easy to understand were not able to gain the highest summit. The last bit was up a steep rock tower. As usual, during the week we were in this district the weather was perfect, and the view of great magnificence. The peak is at the meeting-point of three valleys, so that Escreins, La Barge, and Ceillac were all visible. The route from Escreins

* All these localities and the whole valley of the Ubaye are well illustrated by the photographic album, published by the Barcelonnette section of the French Alpine Club, and of which a copy has been kindly presented to the Club Library. There is in it an interesting series of photographs taken on the spot of a great avalanche which fell from the Miéjour, on May 29, 1879.

† 'Alpine Journal,' ii. 207.

taken by Signor Novarese in 1878, and MM. Salvador de Quatrefages and H. Nast in 1880, is even easier than that from the Vallon Claus. The Chambeyron was very fine and looked more unpromising than ever, and our curiosity was stimulated by the fact that we just could not see the south-western face, which we hoped might afford the means of reaching the top.

We could not believe that the fine weather would last, although the people assured us it would, and felt bound to do something on the Saturday. As we thought the Chambeyron would probably be a tough bit of work, we put it off till the Monday, and went up the Grand Rubren, which with its great pyramid on the top had been staring at us from the end of the valley ever since our arrival. We passed on the way the beautiful Lac de Paroird, the slopes above the south side of which were clothed with splendid larches, which came down to the water's edge, and mirrored themselves in the calm surface of the lake, while above, on either side, rise sheer and jagged rocky peaks. A number of quarries were passed from which marble is extracted. The marble quarries of Maurin are very fine and of many colours and varieties: they will be more 'exploités' when the railway passes through Barcelonnette. A mule might almost be taken to the top of the Rubren, and the distance was not as great as we had imagined (4·10 from Maljasset). The view resembled those from the Pointe de Mary and Font Sancte, but as the peak is very near the Viso, there being nothing between them but the deep cleft of the Val Varaita, that noble summit was even more wonderful than usual, and the sight rivals that which we saw a month later, from the Col della Bicocca. No one who visits Maljasset should *on any account* fail to visit the Rubren. If the Pointe de Mary is the Gornergrat, the Rubren is the Breithorn of the district. We also climbed a slightly higher peak (3,396 mètres = 11,142 feet) a short distance to the east, whence a fine view is gained down into the Val Varaita. Soon after our return to Maljasset that evening we heard the sound of chanting, and looking up saw, descending the steep zigzag path from the Col de Girardin, a procession in the most approved theatrical style. Headed by a priest in his vestments, who was attended by a man bearing a banner, it consisted of a large number of men and women, many with umbrellas, sticks, or baskets. It passed through the village, chanting as it went, and proceeded to the church, where a short service was held, after which it broke up. On inquiry we found that this was S. Anne's day, and that all these people had started from

Maljasset in the morning, carrying their provisions, and had crossed the Col de Girardin to the little chapel of S. Anne, near a lake of the same name (which we had seen the day before from the Font Sancte). Here they met the priest of Ceillac, who had come up with his flock, and a mass was then celebrated. In fact it was a sort of pilgrimage, and the whole thing was a most touching and interesting sight, showing how far we were from the modern world and its uneasy doubts. One woman, who was a cripple, had walked the whole way—some four or five hours.

We spent Sunday in delightful repose on a hillock behind the village, and on Monday, the 28th, started to attempt the giant of the district, which we were assured was still virgin—the Aiguille de Chambeyron. It lies entirely in French territory, though not far from the frontier. Having gained the Lacs de Marinnet by the Col de Mary path, we decided, after careful examination, against two long and steep couloirs, which led up the north face to the east and west of the highest peak respectively. I recommend them to the attention of Mr. Mummery. We then executed a flank movement to gain the western face of the mountain, which was achieved by crossing two ridges and the head of a lateral valley between them. We kept, however, too close to the western ridge, and found ourselves finally at the eastern extremity of the highest ridge, with the true top standing up some way farther to the east. A descent to a snow slope and reascent to the head of the most westerly of the two couloirs mentioned above brought us to the base of the final peak, which was won in a few minutes more by a climb up steep rocks (6.35 walking from Maljasset). The top was not roomy, and bore no traces of any previous ascent. Of all the splendid views we had during that week, this was perhaps the most glorious. We had spent so much time in making out the way that it was nearly 1.30 P.M. when the top was gained. But there was not a cloud in the sky, and the whole of the Monte Rosa, Mont Blanc, Tarentaise, and Graian chains glittered in the clear sunshine of a bright July afternoon. Close at hand rose the mighty mass of the Viso, while to the south stretched the tangled chain of the Maritime Alps, which we hoped to explore in a few days. That view will always remain in my memory as one of the sunniest of all my 'Sunny Memories of Foreign Lands.' We spent an hour taking it all in, and then, varying our route slightly, regained Maljasset in 3.15. The ascent by this route should not take more than five hours walking, but it

is very circuitous. We had a good opportunity of examining the couloir which leads to the west of the highest peak. It is much longer than could be imagined from below, and very steep, especially in its upper portion. We could not decide whether it would be possible to force a way up the eastern ridge from the top of a couloir which would lead to the east of the highest peak, and is probably accessible from the Glacier de Marinet: the rocks of the ridge, however, seem very steep and precipitous. We stayed another day at Maljasset to make the first ascent of a curious three-pronged summit—the Pointe Haute de Mary (3,212 mètres = 10,539 feet)—just opposite the Chambeyron. It was composed of a very crumbling and treacherous rock, and we had considerable difficulty in reaching a snow-field on the north-western face, whence the highest of the three teeth was easily gained. It proved a most unstable perch, quite incapable of supporting a large cairn, so two small ones were built and nine feet of club rope abandoned as a witness of our ascent.

When the time came for leaving Maljasset next day, I was sincerely sorry to be obliged to go, as I had spent a most pleasant week there,* and was pleased with the civility of Martréi, being as yet unaware of his treachery. He can only offer rough quarters and food, but I found it quite possible to exist there, and hope that some of my brother clubmen may be tempted to see this delightful spot for themselves.

Retracing our steps for some way, we descended to the delicious green oasis of La Blachière, situated in a very desolate part of the valley, here but a narrow gorge. Below we passed through several hamlets, and thus gained the Châtelet or Castellet, a great rocky barrier closing in the valley, on which there are remains of fortifications erected doubtless in the 16th and 17th centuries, when this valley was hotly disputed by France and Savoy. To the left the Ubaye roars in the chasm nearly 300 feet deep and but a few feet wide, which was being bridged at the time of our passage. Descending to the village of Grande Sérenne, we began to catch glimpses, through the wooded valley of Fouillouze to our right, of the Brec de Chambeyron, a peak stated by Joanne to be inaccessible, but on which, from the Aiguille of the same name, we had seen two stone men of unknown origin.

* In the landlord's book, in which are inscribed the names of all who pass that way (mostly Italian workmen), the only traveller's name was that of the Count Paul de Saint-Robert, well known for his explorations in the Maritime Alps.

A tiresome road led finally in half an hour or so to the village of S. Paul, prettily situated in a well-cultivated hollow, from which a path runs by the Col de Vars and the Protestant hamlet of Vars to Guillestre. We entered the village, and were soon comfortably installed in the Hôtel Hellion, looking forward to an enjoyably idle afternoon, and quite unconscious of the doom which was hanging over us.

The first intimation that anything was wrong came while we were consuming a *déjeuner*, which was luxurious compared with the fare at Maljasset. Two gendarmes in full costume looked in at us through the glass door, and then disappeared. Returning presently with a comrade, they entered the room, and through the mouth of the 'brigadier' or chief informed us that they had come to take us before the *juge de paix*. This was rather startling, but as we had quiet consciences, I replied that we would come after finishing our repast. They assented, but remained on guard at the door, evidently fearing that now they had given the alarm we should lose no time in escaping. After quietly finishing our *déjeuner*, we announced that we were ready to start, I being provided with my passport, and the two Almers each with their *Heimatschein*; Almer père grimly recalling a somewhat similar adventure with Mr. Tuckett in the Suldenthal, in 1866.* The 'brigadier' asked if we had any *plantes*, and I was able truthfully to reply in the negative, but when he inquired after *desplans* I confess I was thoroughly puzzled. Fortunately, the distance to the residence of the *juge* was not great, as it was not agreeable to march through the village street under close guard. But, as will be seen later on, we had our revenge. After groping through a stable and other back premises we were at last ushered into the presence of the worthy Justice Shallow, a very typical specimen of his class. Having approved of the documents presented by the two guides, although he later allowed that he did not understand German, he perused my passport, held wrong side up, and was much edified by the American eagle. Discovering a French *visa* on it, he began to demonstrate to me that the passport was invalid, being more than two years old. Now this fact was quite true, but, as I was getting provoked by his long cross-examination, and thought it best to make a firm stand, I held out for its validity. This, however, he could not allow, and, being much given to unnecessary talk, inflicted a long lecture on me as to the advisability of going about provided with proper papers, to which the only answer I could

* 'A. J.' ii. 341.

make was that we had no intention of crossing the frontier, and that my letters, etc., were quite sufficient to prove my identity. The old man prattled on at great length, not being satisfied with my account of the reasons which had brought us to his valley. At length he determined to put a crucial question, and, remarking that M. Hérold, the Préfet de la Seine, and an old schoolfellow, had just been paying him a visit, and that he had that morning received a letter from the President of the French Alpine Club, inquired of me the name of the latter gentleman, adding that as I claimed to be a member of the club, I of course knew the name of my President. I must explain that this was meant as a catch. M. Joanne had lately, to the regret of all *Alpinistes*, resigned this office, and the election of his successor had taken place a short time only before my departure from England. Fortunately, however, partly from having stopped at Lyons and Grenoble on my way to renew the acquaintance of some, and to make that of others, of my French colleagues, partly from the fact that I had had the pleasure of meeting him at the Fête du Lautaret in August 1878, the name of Monsieur Xavier Blanc, Sénateur for the department of the Hautes-Alpes, recurred to me, and this lucky recollection served at once to allay all the *juge's* suspicions. He became as friendly as he had before been surly, showed us all his curiosities, returned with us to the inn, and examined all our *impedimenta* with great interest. This revealed the extraordinary fact that neither the good man nor the 'brigadier' were aware of the *existence* even of the great French ordnance map, and eagerly took down an address in Paris where I assured them the sheets could be procured without any hindrance on the part of the Dépôt de la Guerre. It then appeared that the 'brigadier's' question as to 'plans' had reference to map-making, and as we were all now the best of friends, they soon confessed that our landlord at Maljasset had sent down word of our long stay there and mysterious proceedings, and suspecting we were *des espions prussiens* (!!!) come to survey the country for future annexation, had asked for the aid of the gendarmes, who were on the point of starting to capture us, when we appeared, and saved them the long tramp up the valley. I could not at first believe in this astonishing instance of peasant suspicion, but it is quite genuine and characteristic. We later came across traces of the same feeling in the French valleys of the Maritime Alps. 'All's well that ends well,' and I was well pleased to get out of a position which threatened at one time to become awkward. But I must now tell how we

had our revenge. Our axes, ropes, etc., excited the liveliest curiosity in the mind of the little *juge*, and even the stately 'brigadier' condescended to unbend a little. They expressed a desire to see how the rope was used, and on my explaining this desire to Almer, he volunteered to show them all the secrets of the trade, with, as I remarked, rather excessive eagerness and a twinkle in his eye. He proceeded to fasten the rope round the *juge*, the 'brigadier,' and a fat *commis voyageur* who happened to be present, placing himself and his son between the Frenchmen. He gravely distributed ice axes, wine barrels, and knapsacks till the whole party was got up in thorough Alpine trim. He then led the procession out into the yard in front of the inn, and, before one knew what he was about, he had marched out into the street. The official part of his train drew the line here, and vehemently resisted, but he would not be gainsaid, and dragged the unwilling victims nearly the whole length of the village. The news soon spread, and the inhabitants proceeded to see the strange sight, the excessive drollness of the whole proceeding entirely overcoming their fear of the two great officials. The village resounded with shrieks of laughter, and the inmates of the inn yard were among the merriest. When the party returned, I tried to apologise, as far as my mirth would allow, for this dreadful insult. By this time the victims themselves saw the comic side of the matter, and, though slightly ruffled and conscious of having been overmatched by the *espions prusses*, condescended to accept my excuses. It will be a long time before I forget that most laughable scene; and I have no doubt the *juge* and 'brigadier' will often be reminded of it. At Barcelonnette, two days later, we found the people there in fits over our revenge, and quite at the end of our tour our landlord welcomed us back to Guillestre with the words, 'Oh, yes; I have heard of your tying up the *juge*!'

Not to interrupt the course of my story, I omitted to say that while we were at the *juge's*, two men came in who we were informed were the first conquerors of the Brec de Chambeyron, which we hoped to ascend next day, and who had been summoned to send their names to Monsieur Xavier Blanc.* They declared it was foolish for us to attempt the ascent, but I was determined not to take one of them with us, as Almer had seen from the Aiguille de Chambeyron a practicable way

* The Barcelonnette section had offered a reward to the native who first reached the summit, and also to the one who led the first tourist to the summit. I hope that our success did not prejudice the latter.

up. They would not, however, give us any inkling of their route. The taunts of local men serve of course but to inflame the zeal of the true mountaineer; and, as has always happened to me when attempting an ascent against the advice of the local men, we succeeded perfectly in our undertaking, next day, July 31. Retracing our steps to Grande Sérenne, we mounted through the pretty valley of Fouillouze to the village of the same name just under the Brec. As it is very steep on this side, we made a long and very rough ascent to reach some lakes at its northern foot. Carefully scanning the crags as we advanced, we finally reached the Col de la Gippiera (= chalk quarry) on the frontier. We had been joined on the way by two men who, partly out of curiosity to see whether we would really get up, and partly from a desire to learn the way so as to break down the monopoly of their fellow-villagers, came with us as far as the Col. The ascent of the final peak proved quite easy, and was effected by the eastern or Italian face by means of snow gullies and loose rocks. After climbing as far as a great stone which blocked up a narrow gully, we climbed up both and thus gained the summit—a great plateau sloping towards Fouillouze, and of which the Italian lip is slightly the highest (3,388 mètres=11,116 feet). Though the way is easy, it is very rough and roundabout, so that 6 hours 25 minutes walking were spent in climbing the 1,915 mètres (= 6,283 feet) from S. Paul. We hoisted a great red flag on our arrival, and it was soon seen from the S. Paul inn, from which just the tip of the peak is visible. The view was cloudy, but the Aiguille de Chambeyron was very grand, and we felt very proud of our conquest. We returned to S. Paul by the same route in 4 hours 20 minutes, learning at Fouillouze, from the wife of one of the heroes of the first ascent, that they had struck to the right when at the base of the great boulder, across difficult rocks, and certainly we can bear witness to these rocks being steep. We were received in triumph at S. Paul, the daughter of the hostess being highly delighted at having seen us on the summit, and the old *juge* being most excited.

We left S. Paul next afternoon (August 1) by the local diligence, and passing over the remarkable road constructed through the fine 'gorge de la Reissolle,' and under the magnificent rock-hewn fortress of Tournoux* (near which a village church shelters the remains of the last Duke of Guise of the old

* See the photographs numbered 32 and 33 in the Album mentioned previously.

line, who committed suicide here in 1747), joined the high road coming from Larche and the Col de l'Argentière. After a rapid descent down the zigzags of the Pas de Grégoire the valley broadened out. The road passes by Jausiers, the scene of a terrible Vaudois persecution in the 14th century, and in a few miles reaches the little town of Barcelonnette, founded in 1231 by Raymond Bérenger, fourth count of Provence, and named the 'Little Barcelona,' in remembrance of his hereditary connection with that county. The whole drive from S. Paul in the late afternoon had been most agreeable, and we began to feel, as we gazed at the distant hills to the south, that we were on the threshold of the main object of our journey—the Maritime Alps.

We found unexpectedly good quarters at the Hôtel du Nord (*chez Martel*), on the *place*. Monsieur Arnaud, the secretary of the Barcelonnette section of the French Alpine Club, soon found us out, and with the other members entertained us at a most sumptuous banquet. He was very kind to me in many ways, and gave me (though a perfect stranger with my *qualité* as a member of the C. A. F. as my sole introduction) a certificate signed by himself, and bearing his stamp as notary, and another of the 'Tribunal de 1^{ère} instance,' which he kindly procured for me, to the effect that I was travelling in the Alps 'comme simple touriste, n'ayant d'autre but que de gravir et de faire connaître les montagnes au point de vue artistique.' Armed with this document, I defied many a gendarme in the Maritime Alps, and always found it more powerful than my passport. I take this opportunity of thanking Monsieur Arnaud for his courtesy, and can assure my readers that they may rely on his good offices should they ever find themselves in Barcelonnette. Yielding to his entreaties we remained in the town two days in order to see the *fête patronale*, a very pretty and thoroughly French sight, which lasted a day and a half. Religious processions, races, music, sports, fireworks, illuminations succeeded each other with bewildering rapidity. It may be worth while to describe one amusement, which I dare say may still survive in England. From a rope stretched across the *place* were hung four large earthenware jars, containing respectively water, flour, a rat, and a fowl (whence the game is called the *jeu de la poule*). The boys of the villages, armed with a long stick and blindfolded, tried in turn to break the jar containing the fowl; and their erratic movements were often very amusing. This time three jars were broken before a small boy, amid the *vivas* of the crowd, succeeded in smashing the jar with the fowl, which became his possession. A local band became much excited in the evening, and played the Marseillaise con-

tinuously until 5 A.M., as I can bear witness. Monsie Arnaud told me that at other times the little town is very du but I shall always recollect it crowded with country peop dressed in their best, all bent on enjoying their annual ho day. We left Barcelonnette on the morning of August 4, the way to Allos, thus beginning our wanderings in the Ma time Alps, of which I hope to speak in another paper. W carried away most pleasant recollections of our week in th Ubaye valley, and I venture to hope that some of my reade may be tempted by my description to give up for one summe the beaten round and seek 'fresh woods and pastures new in the fine mountain group which culminates in the twin pea of the Aiguille and Brec de Chambeyron.

THREE NEW ASCENTS WITHOUT GUIDES IN SOUTHERN DAUPHINÉ. By FREDERICK GARDINER. Read before the Alpine Club, June 1, 1880.

TWO of the three peaks, the first ascents of which it is the purpose of this paper to describe, are situated at the head of the Val Godemar, which lies on the southern side of the main group of Dauphiné. This valley runs from east to west, roughly speaking, and the peaks may also be said to lie at the head of the Val des Bans, running from west to east, and ending at the well-known village of Ville Vallouise. The higher of them, the Pic Bonvoisin, 11,503 feet, is well seen from Ville Vallouise, and is the most imposing mountain viewed from that place. The other is the Pic Jocelme, 11,277 feet, which is very conspicuous from La Chapelle en Godemar, where it is incorrectly known as the Pic Bonvoisin; at Le Clot, a small hamlet at its foot, it is called by its proper name Jocelme, and the true Bonvoisin of Vallouise by its proper name. The Jocelme as seen from La Chapelle completely blocks out the view of the Bonvoisin, and the name Jocelme is there given to a minor peak (first ascended by the Pilkingtons and myself in 1878*) between the Opillous and Les Bans, which only makes 'confusion worse confounded.' In Bourcet's old map of Dauphiné, which is remarkable for the manner in which he has taken most of the physical features of the country either upon hearsay or from the efforts of his own imagination, but which is curious with regard to the old nomenclature of the district, I find that to the north of the Col du Sellar the

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* 'A. J.' ix. 90, 226.

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Opillous is marked 'Montagne de Joseyme,' while to the south of the Col the real Jocelme is printed 'Montagne du Celar.' The third peak lies almost due south from the Jocelme, and is the point marked 3,324 mètres, or 10,905 feet, in the French Government map between the Col du Loup and Sirac; it stands at the head of the Vallon de la Pierre, the northern branch of the upper part of the Val Champoléon. This peak is known at Le Clot as *Cime de Chaborneau*, and at Les Auberts en Champoléon as *Pic Verdonne*, which latter name has been adopted by the 'Société des Touristes du Dauphiné.' It is possibly the same mass marked Montagne de Garroux by Bourcet and spoken of by Professor Forbes, though probably this name is intended to apply to Sirac, as being the higher and more remarkable mountain. I have begun my paper with these explanations regarding the position and topography of our three peaks because, beyond Mr. Bonney's sketch of Sirac (erroneously called Pic Bonvoisin) opposite page 5 in his charming book 'Sketches in the High Alps of Dauphiné,' some passing remarks on the Opillous in Mr. Moore's book 'The Alps in 1864' (p. 83), and Mr. Coolidge's paper in the 'Annuaire' of the French Alpine Club for 1877, this district, or rather this group, has been practically unnoticed. On July 11, 1879, in company with my friends Charles and Lawrence Pilkington, I reached the small village of Le Clot on the western side of the Col du Sellar, where the Val Godemar turns to the south-east and terminates in fine pasture land near the glacier flowing from the Col du Loup. In Bourcet's map the upper part of the Val Godemar is called Val de Garroux, and the stream from the glaciers on the west side of the Col du Loup is marked 'La Severaisse R.' (=ruisseau or rivière), the former name not appearing in the Carte de l'Etat-Major, nor, so far as I could learn, known at Le Clot. We had been a week among the mountains in weather which had been more or less bad, and it was an agreeable variety to us that the day was fine and clear. There is no inn at Le Clot, but one Jourdain, who has the best house in the place, receives the few travellers who visit this out-of-the-way spot; and if his entertainment is limited, his ideas of remuneration are large, and his conduct to us in that respect reminded me much of what I have read regarding the Rodiers at La Bérarde in the early days of mountaineering. We started about midday for a bivouac from which we hoped to ascend the Jocelme next day, and in about an hour the fine peak of Sirac came in sight, rising in one precipitous wall almost directly from the valley. Following the valley, which

here turns to the left and opens out into a broad stone-filled plain, we climbed up steep grass slopes on the left and found a very comfortable bivouac under a huge rock. We were rather downhearted when evening set in, for a dense mist enveloped all the surrounding peaks; but when we started next morning at 2.30 A.M. it had all cleared away, and the day turned out one of the few really fine ones that we enjoyed during the first half of our tour in Dauphiné. We started by lantern light and mounted rapidly over steep grass slopes directly above our sleeping-place for about an hour, until we came to a kind of plateau partly covered with snow, and, bearing to the left, in half an hour more we reached a broad ridge running in an easterly direction towards the summit. We had carefully studied the north-western face of the Jocelme from the village of La Chapelle en Godemar (some three hours lower down the valley than Le Clot), and, although it had looked formidably steep, had determined to try it, for we thought that even if we could reach the nearest or south-western peak without serious difficulty by way of the arête, the jagged ridge connecting it with the highest point might baulk us at the last moment. After spending more than two hours in attempting this route we returned to the ridge, and from it climbed the first spur of the peak over fairly easy rocks. When we reached that point we were astonished to find almost the entire south-eastern face covered with snow and glacier, and even more so to find the existence of another peak three quarters of a mile further to the east and evidently the highest of the group. This we knew at once must be the true Bonvoisin, but we had previously thought that the Jocelme and the Bonvoisin were one and the same peak, and simply known by different names on either side of the chain. Descending into a snow basin between the ridges of our mountain, we crossed a second southern ridge, and passing along the snow-covered glacier leading to the top we reached it at 9.30 A.M. The position of the Jocelme is particularly good, as it stands at the junction of the two great valleys of southern Dauphiné, and we could clearly see straight down the Val des Bans to Vallouise on the one side and far down the Val Godemar on the other, to where its stream joins the river Drac. The face of the Jocelme towards the north-east falls in grand precipices to the Val des Bans, and the same may be said of the north-western face descending to the Col du Sellar, by which we had thought to make the ascent. The temperature was delightfully warm, and we spent nearly two hours on the top taking sketches and observations with a prismatic compass, and then turned to descend. We made our way by the snow-

covered glacier on the south-eastern face and got down rapidly until we came to a small icefall at the foot of the Bonvoisin, where we stayed to examine the face of that peak, and, although it looked steep and perilously loose, we decided to try our luck upon it on the morrow, and then carefully descending the icefall we went down snow-filled gullies to our bivouac, well content with the result of our day's work, the most pleasant part of which, perhaps, was the tramp up the broad ridge over the crisp snow in the pleasant morning air, watching the changing effects of a glorious sunrise on the peaks and valleys of Western Dauphiné. The night of July 12 was hot but fine, and we started next morning from our bivouac in fair weather; but shortly after daybreak the weather became rapidly bad, and when we reached the foot of the icefall which we had descended the day before, the storm broke upon us and we turned and descended to Le Clot, where we arrived at 9 A.M. in a drenched condition. It was a great disappointment, for this peak was an old enemy and had been down upon our list for 1878, but had looked so impossible from the Val des Bans that we decided to try it on the other or western side on the first opportunity. However, our time was short, we had many peaks to climb, so we left this group and went to other parts of Dauphiné, and it was not until July 31 that we found our way back to it, but under very different conditions. In the first place, Charles Pilkington had been recalled to England almost immediately after our ascent of the Meije, so that we were only two instead of three to do the work; in the second place, instead of being on the west side of the group, we were bivouacking in the valley of the Torrent de la Selle (called by Bourcet Vallon de Beauvoisin), in a cowherd's hut, with the Col du Loup between us and our peak; but, on the other hand, the weather, instead of being extremely bad, was set fair. It says something for the attractions of this part of the Alps, that although we had made all our plans to spend a fortnight in the Tarentaise after Charles Pilkington had left us, we gave them all up to return to the Bonvoisin and other peaks in its neighbourhood. The Vallon de Beauvoisin, where we were bivouacking, is separated from the Val des Bans by a long spur marked in the Carte de l'Etat-Major 'Crête de Bonvoisin.' At 1.30 A.M. on August 1 we left our hut and started for the Col du Loup. At 6 A.M. we reached the lowest depression * of the great nameless glacier situated on the east

* This is in all probability the pass crossed by MM. Guillemin and Salvador de Quatrefages about a month later than our visit. It has been named by them Col du Sirac. ('Annuaire du C. A. F.' vi. 56-8.)

side of the pass, and here we lost two hours through mistaking it for the Col, so that it was not until 8 A.M. that we crossed the true Col du Loup, which cost us some trouble, as it was guarded by a snow cornice, and the rocks on either hand were covered with ice; but once crossed we rapidly descended a steep snow-covered glacier, on the western side, for about a thousand feet, and stood once more close to the small icefall of the Jocelme Glacier, where we had been driven back by bad weather on July 13. Fortunately for us we could kick steps in the snow which covered the ice, and were thus saved the labour of step-cutting, and soon stood at the base of the Bonvoisin. The peak rose steeply above us; to the right a bay of snow ran high into the mountain, the top of which seemed crowned with formidable-looking towers of rock. We fixed upon this snow as the best way to the top, but as some stones came bounding merrily over it we soon took to some rather difficult rocks on the left, so as to give the falling stones as wide a berth as possible. After climbing these rocks for a short time we found a small stream of water trickling down a gully, and although it looked as if it might be a stone shoot, we agreed to lunch under the shelter of a large rock near at hand, as it might be our last chance of getting water. Seeing that no stones came, we left our cover for a long drink, when suddenly a noise above us warned us back, but it was too late, and before we could once more get under shelter, Lawrence had received a nasty blow on the leg. I had been very unwell all the morning, and now that Lawrence was somewhat lame we began to fear that our expedition was doomed to failure. However, we agreed not to give it up yet, and, leaving our knapsack behind us, started again. The rocks soon became easier, and we came to a short patch of snow; to our left rose a steep rock peak, and taking it for the highest point we turned towards it, climbing over abominably loose rocks which required all our efforts not to dislodge. These rocks became steeper as we climbed upwards, and we soon forgot our ills in the excitement of the climb, and at a little after 11 A.M. stood on the top, but not the true top of the Bonvoisin, for, to our dismay, we found that it stood up further to the east, a fine rocky peak steeper than ever. The ridge between us and it, mounting in a succession of towers flanked by steep buttresses of loose rock, was evidently impassable. Although our chance of success looked very poor indeed, we determined to fight to the last. There was nothing for it but to cross the buttresses close to the foot of the towers on the southern side. After an hour's hard work we reached the base of the final peak. Seen

from Sirac the Bonvoisin shows as a nearly level ridge, the highest point being at the eastern end, and we were now at the base of the western. It was impossible to climb straight up, so working our way with difficulty over one more buttress, building a last guiding cairn and dipping into a gully beyond, we struck straight up and reached the western point of the final ridge, and in ten minutes more stood on the top of Bonvoisin at last. Those last two hours will always live in my memory as among the most toilsome I have spent in the Alps. It was twenty minutes past midday when we reached the summit, and, as we had left our bivouac at 1.30 A.M., the ascent had cost us nearly eleven hours' hard work. Starting for the descent at 1 P.M. we followed the same route until clear of the final peak, then turning straight down one of the buttresses we picked up our knapsack, and at 3.30 were once more on the glacier. The excitement of the climb being now over, we felt it a weary trudge up the soft snow to the Col du Loup, and at 6 P.M. we found ourselves once more at the hut in the Vallon de Beauvoisin. Taking the expedition as a whole, it may fairly be called difficult, and I feel pretty sure that made from any point there will always be the fatal objection to it that there is a decided danger from falling stones.

On the day following we crossed the Pas de la Cavale (or, as Bourcet calls it, Col du Haut Martin), to the head of the Val Champoléon, for the purpose of attempting the ascent of the Pic Verdonne. The Pas de la Cavale is made up of two cols crossing two ridges of the nameless peak, marked 2877 mètres in the French Government map, situated at the head of the Val de Fournel. The head of the Champoléon valley is extremely wild, and the southern precipices of the Verdonne, flanked by a large triangular nameless glacier, look very fine viewed from the point where the Champoléon valley branches into the northern Vallon de la Pierre, running up towards the peak and into the Val de Rognons, running in a southerly direction. Near the junction of these valleys we found a mysterious, ruinous, half subterraneous building, more like a chapel than anything else, which served our turn for a bivouac very conveniently. Following our usual plan of making an early start, we left our sleeping-place at 1.40 A.M. on August 3, and in a few minutes reached the stream flowing from the Val de Rognons, which had to be crossed, a work of no slight difficulty in the uncertain light of 1.50 A.M. Lawrence crossed all right, but I got wet half way to my knees, an annoying circumstance which kept me in an unpleasant state of coolness for the rest of the day. We climbed upwards

pretty quickly, over avalanche snow and loose stones, until we reached the grass-covered slopes under the large triangular glacier lying in the angle between the Pic Verdonne and the Crête des Bouchiers. These slopes we found covered with beautiful flowers and in possession of a fine pair of chamois. From the edge of the glacier we got a good view of our peak; it seemed divided into two summits, a steep couloir on the extreme left of the western and lower peak being obviously the way to it, but whether we could get from it to the eastern and higher peak was a problem to be solved. So far as the top of the couloir we got along easily enough, but beyond the work grew more difficult. Traversing the northern face of the lower peak over ice-covered rocks, we then mounted towards the arête joining the peaks, and crossing over to the south side reached the true summit, which commands a splendid view of nearly every peak of importance in Dauphiné. We arrived at 7.30 A.M., and after spending a happy hour on the top began the descent. It was so early in the day that we might have remained much longer on the peak had it not been that we had seen unmistakable traces of recently fallen stones, so we decided to get off the upper part of the mountain and down the couloir before the sun had power to loosen any of the stones above. Once the ice-covered rocks were passed, we glissaded rapidly down the couloir, and, indeed, may be said to have glissaded most of the way down to our sleeping-place, which we reached at 11 A.M. Next day we made the ascent of Sirac from the village of Les Auberts en Champoléon, it being the second ascent of the peak; the first actual ascent of this peak was made by Mr. Coolidge on July 2, 1877, from Le Clot.* On August 5 we ascended the Vieux Chaillol, an expedition remarkable for the monotony of the climb and the superb view from the summit, and we then returned to civilisation at Gap. We had brought most of our provisions, blankets, &c., from Ville Vallouise, and had to send about twenty miles down the Champoléon valley to Le Pont du Fossé for even such simple requisites as bread and coffee. Some newly made cheese, potatoes, and eggs were absolutely the only food we could obtain in the upper part of the valley; it is certainly the worst provisioned part of the district I have yet visited. Had it not been that we wished to thoroughly explore the Jocelme, the Bonvoisin, and the Verdonne from all sides, it would have been better to have taken all these expeditions from Le Clot en Godemar, but the variety of

* 'A. J.' viii. 332.

positions from which we started for each peak added to their interest, and I shall always remember these expeditions as among the most pleasurable that I have made, either in Dauphiné or elsewhere.

Appendix.

Late in the afternoon of July 20 last summer (1880) I found myself once more at the ruined hut at the head of the Cham-poléon valley. This time I was in company with Mr. Coolidge, the two Christian Almers, and my old friend Simon Barnéoud, the porter of Vallouise. We had left the Protestant village of Dormilhouse in the morning, had ascended the Grand Pinier, and had then crossed a new pass leading down the Val de Rognons, to which we have given the name of *Col de Rognons*. The hut had become much more dilapidated since my last visit, and barely sheltered us from a heavy thunderstorm which began just as we arrived. Our object in visiting this spot was to try to cross a fine glacier pass which I had seen when ascending the Verdonne last year. This pass lay at the top of the couloir described in the foregoing paper, which is situated immediately under the western and lower peak of the Verdonne. Leaving our night quarters at 3.50 A.M. on the 21st, we followed practically the same route I had taken in ascending the Verdonne, but, owing to the much smaller quantity of snow, we found the walking rougher and less agreeable. Our porter, who was heavily weighted, did not accompany us, but went to Le Clot by the Col de Vallon Pierre. At 8.45 (having halted over an hour on the way) we reached the top of our pass, and below us spread the fine nameless glacier which flanks the northern face of the Verdonne; it flows in a noble sweep to the upper plateau of the Val de Garroux. Down this glacier lay our pass, which we have named Col Verdonne, and of which the height is probably 10,200 feet. A steep slope of snow over ice led to the upper part of the glacier. This slope, if devoid of snow, as it may be later in the season, would give some trouble. At first the descent of the glacier was easy enough, but the further we got down the wider and more unreasonable became the crevasses. They gave us a good deal of trouble, and in one place we took to the rocks on the right-hand side in order to avoid them. It was 12.10 when we quitted the ice, so it had taken us 1.55 from the cold to descend the icefall. We then hurried down to a grassy knoll overlooking the lower valley, and, enticed by

our comfortable couches of fern and alpenrosen, fell fast asleep. We must have slept for an hour or more, when some shepherds and their dogs passed near us, and regarded us with no slight wonder. We then descended rapidly to Le Clot en Godemar, and once more became victims of Jourdain's extortions. We arrived at 3.10, but poor Barnéoud, who had got entangled among the southern ridges of Sirac on his way to the Col de Vallon Pierre,* did not put in an appearance for a couple of hours later, with his load very much on one side, and he himself rather the worse for wear.

WANDERINGS IN TICINO. By A. CUST.

2. *Val Verzasca. Val Lavizzara.*

VAL VERZASCA is wilder and less visited even than Val Maggia, yet it is traversed by a good carriage road and an omnibus as far as Brione, and its scenery has rare attractions.

Towards the end of October, 1879, I descended from the upper road mentioned in the last number as running along the hillside above Locarno, and went to Gordola to seek night quarters. The search was not so simple as I had expected. The chief inn refused me a bed, and even under the obliging escort of a young man whom I met in the street the failure was repeated more than once. 'You see,' he said, 'there are plenty of inns here in a sort of a way, but they are *for the people themselves*. They could have taken you in at the inn at which you applied, but they did not care to. No strangers ever come here.' At last he gained me admittance at a grocery shop, which possessed an interior room fitted in inn fashion, but only intended, I was told, for select private guests.† I was made comfortable here, and, as usual, found a good bed. The never-failing slate produced a total of 2 fr. 70c., which included $\frac{3}{4}$ litre of 'Vecch.,' a word whose magic import in

* The way lies over two cols named Cols de Goiran and de la Valette on Bourcet's map. Monsieur Guillemain, who passed this way on August 27, 1879, reckons an hour from the Vallonpierre to the Goiran, and fifty minutes to the Valette, whence the descent to the Vallon de la Pierre should take ten or fifteen minutes ('Ann. C. A. F.,' vi. 68-72). The two former cols are about the same height, but the Valette is 300 or 400 feet higher.

† This seems to be a common custom in private houses, the sale of wine merely entailing a small duty.

the district I now first knew. The tender of a slight addition for service was refused: it was not usual in this country, said the host. The latter, Agostino Gnesi by name, having been in Australia, could speak English.

The guide-books continually disappoint by praising a ravine simply because it is a ravine. Ravines are apt to pall on the traveller from their frequency, and from the tendency of one pine gorge to be like another. But at sight of the Verzasca gorge the feeling is one of wonder that so much beauty should be lavished within a few miles of the lake without anyone coming to see it. Doubtless the superiority of these southern valleys is due in the main to the simple difference of foliage. Pine forests as features of a landscape have little beauty and a monotonous aspect. The southern vegetation is always beautiful and varied. The finest part of the ravine of the Verzasca is comprised between Gordola and Vogorno, which is the first village on the road and possesses an *osteria*. The stream cuts deep through the rocks below the apparent bed of the valley, grooving and fluting them, and scooping out long pools across its channel, where, under the shade of overhanging trees, it lies motionless and asleep. To see its retiring beauties a descent from the road is here and there essential. Opposite, or slightly above, the village of Corippo, an old stone arch spans the stream, the only bridge in the lower valley. By crossing it the pedestrian may find an interesting path back to Locarno. Mr. D. Freshfield has furnished me with the following particulars of this walk:—

‘After crossing the bridge the path leads up to Corippo, then descends slightly to cross a lateral torrent. Beyond this it is a mere track among chestnut groves, and may at first easily be missed by anyone without pathfinding instinct. The general rule is to keep the best marked path, irrespective of its going apparently straight uphill. After a long but fitful ascent the hillside becomes broader and is broken away into deep recesses, across which there is only one track possible. After circling round the bays the path corkscrews uphill with most extravagant energy for several hundred feet. At last it reaches some huts under the spur dividing the glen of Mergoscia from Val Verzasca. Here the ascent is over. It is not necessary to ascend to the low gap in the ridge in front. A rough terrace path circles round the corner to the village of Mergoscia. Beyond this take the lower of two roads. This leads past another hamlet, and then by a steep descent to the stream of Val Mergoscia. The rest of the walk lies along the remarkable path seen from the carriage road cutting the cliffs, and carried

along the sides of deep ravines, to the angle overlooking the lake, where it broadens sufficiently to be used by carts, and descends, as described by Mr. Cust, directly on Locarno. The views throughout the whole walk are beautiful—though the straight lines of the carriage road on the opposite bank interfere somewhat with the romantic wildness of the defile.

‘I am ashamed to give the time (2½ hours) I took from the bridge at Corippo to Locarno, for, much as I hate hurrying through beautiful scenery, I had only a narrow amount of daylight. But I think the average walker may count it three to four hours. The latter is the time the people I met gave me; but it seems to me exaggerated for those who have not to carry a burden or drive a calf.’—D. W. F.

Just above Lavertezzo, where the valley is more open, the Verzasca again courts admiration in most curious hollows and long fine troughs in its marble-like channel by the road side. To this, ‘the true pearl of mountain torrents,’ an eloquent tribute is paid by Mr. Gosset: ‘Near Lavertezzo and behind Brione, near the Ponte Scuro, the Verzasca glides in a natural bed of rocks, a more beautiful object than a torrent perpetually foaming in a gorge. Its course is there tranquil; it forms a little cascade white as snow, then a basin 100 yards long, then a cascade and a basin, and so on in succession. It is often possible to see distinctly the bottom of these basins under water ten feet in depth, and the latter, without exaggeration, is clear as crystal. But it is pre-eminently the colour of the Verzasca which constitutes its principal charm; it contains at once Prussian green and emerald green. No artist in the world has painted this superb green, nor suspected its existence unless he has seen it on the spot. And no one who has seen the Verzasca near Ponte Scuro in summer or autumn, when once the melting of the snows has passed, will ever again admire any other mountain torrent.’*

Brione, 17½ kil. from Gordola, is picturesquely situated at the foot of the bold rocky eminence which parts the two branches of the valley. This noble cliff is the distinctive feature of the place. The sheer precipice, perhaps three times as high as Dover cliffs, gains in effect from the crown of noble beeches which shadows its brow. The village, to whose aspect interest is given by a large chateau-like house with four towers, nestles in the flat of the valley. It is the Bignasco or

* From the ‘Itinéraire.’ See also ‘Italian Alps,’ p. 32. It will be apparent how fully I am in sympathy with the descriptions given in that work of the characteristic scenery of the district.

Baceno of the valley, and the opening of the Val d'Osola, as the western branch is called, is not unworthy to be mentioned in the same sentence with the Val Bavona, though lacking the successive distances and Basodino in the background of the latter.

Above Brione the valley—which in its upper part is so barren that wonder has been expressed how the inhabitants manage to live—is a scene of the sternest wildness; the ravines are mere chasms or rents in the lofty rock walls, whence the streams emerge in broken waterfalls from beneath picturesque pinnacles of rock. At Frasco, by the wider opening of the Val d'Efra, is an inn where lodging can be had, the highest in the valley. It is not worth while to continue the exploration beyond the neighbouring village of Sonogno, prettily situated at a second bifurcation of the valley, unless bound for one of the upper passes. A depressing scene of savage and barren desolation follows, after which the valley, bending at right angles to its previous course, assumes the name of Val Vigornesso. From the bend starts the route for the Passo di Cabione, described in the '*Alpine Guide*,' p. 308. The pleasing scenery of the Val Chironico makes this a very interesting pass to the Val Leventina. The paths on both sides, though excellently indicated on the revised Government map,* are difficult to find without local assistance. From the head of the Val Vigornesso the Passo di Piodajo leads to the head of Val Prato. It is approached from the Alp of the name by a narrow passage at the corner of the rocks overlooking the ravine, which it might be difficult to hit off in descending; and ordinary pedestrians should take a guide. The pass opens out a fine walk to Val Lavizzara, and by combining it with the Passo di Cabione, Peccia can be reached in one long day from Chironico. Between the two passes is the more difficult Passo di Barone, east of the lake so called, by which chamois-hunters reach the Campolungo by skirting the head of Val Chironico.

The shorter branch of the valley at Sonogno leads to the Passo di Redorta described in '*Italian Alps*,' p. 29. 'Dull' as the pass itself appears to be, a remarkably fine walk may be made from Brione to Fusio by crossing it, ascending the romantic gorge of the Val Prato to the pastures at its head, and then traversing the low pass marked on the map, between

* Sheet 507 of the Original Survey to which my references are made. The sheets published can be obtained for 1 fr. each. See Aug. number of the *Journal*, p. 43. In Dufour's map the upper valley is wrongly called Val Cabione.

Il Uomo and Pizzo di Ruscada. The path from the latter descends to Fusio amid very pleasing scenery.*

To return to Brione. I had been recommended to go to the inn kept by Fabretti, which is on the road above the village. I was received with a surly stare, and my inquiry whether I could have a bed was responded to with a preliminary and apparently suspicious examination of my qualifications for that favour. It was, however, the procedure of a snarling dog sniffing at one's heels, who makes friends on finding matters right. As it happened, I had made the acquaintance of the landlord's infant son under Gnesi's roof. The prompt production of this, my trump card, felicitously turned the tables in my favour; and a satisfactory account of myself once tendered, at no inn in the Ticino did I meet with more deferential civility. The house seemed new, and of a somewhat superior kind to the ordinary village inns. I found fresh meat, excellent wine, and a comfortable bedroom. The kitchen is quite a study in the Dutch style.

I proposed next morning to cross to Bignasco by the Forcella Cocco† at the head of the Val d' Osola. With the beauty of this valley I was particularly struck, partly perhaps because I was not prepared for it. The southern slopes are covered with beeches, which at this season were all ablaze with splendid autumn colouring that made the tints on the chestnuts of the lower valleys appear brown and sober. Where a streak of sunshine fell, there was a line of fire down the hill. It was difficult to keep my eyes off the gorgeous spectacle, while

* Besides the above, the following passes are known to the natives:—
 (1) Passo d' Eva from Brione to Maggia. The track on the east side is circuitous and not marked on the map. Ascending to Alpe Mattro it traverses the hillside to the Alpe di Giovo, on the far side of the ridge running east from the Madone di Giovo, whence it doubles back to the lake at the foot of the pass. The finest passage is over the Madone itself. A direct course to the pass is possible, but should not be attempted without assistance. On the Maggia side is a good track as marked on the map (sheet 511). This pass and the Passo di Masné, to the north of it, by the Lago Pianca and the Alpe Cima il Motto, are traversed by cattle in summer. (2) By the Val d' Efra to Pollegio. Said to be a passage for cattle, but I could not obtain information as to the route pursued. There is no pass to Val Nadro (see last number, p. 67), and the Passo Ramf, leading to the Val Mareri, the route for which is accurately indicated on the map (sheet 508), is anything but a cattle track. (3) From Lavertezzo to Lodrino or Iragno in Val Leventina.

† Fabretti called it four hours to the top and three down, but my subsequent calculation made the ascent nearly five hours.

my thoughts dwelt on the almost unexampled succession of splendid weather and scenery which had been my recent lot. As I ascended, the beeches dwarfed themselves in quaint shapes and tiny bushes, separate or in sheltering copses. Higher up the valley came larches, no mean rivals, with their delicate yellow, to the beeches, and both formed a striking contrast to the sombre pines with which they were grouped together in pretty clumps. There was a singular beauty in this wild spot, where the hardiest trees of the valley led a struggling existence with torrent and avalanche, and died lovely to the last. The utter solitariness of the scene, the upper valley being now entirely deserted, added to its fascination.

The apparent head of the valley, as seen from below, is occupied by a mountain cirque instead of a pass, the pass lying over the first gap to the north of the cirque, in which direction the valley makes a sharp bend. Just above this bend, before reaching the *châlets* of Cavrera, the path leaves the bed of the valley and zigzags up to the left to some higher *châlets*. Hence it is carried at a high level to the *Alpe d'Osola*, situated at a considerable elevation at the extreme head of the valley, from which the pass is reached by a short and gentle ascent south of west.

By missing the foot of the zigzags, I entangled myself in an adventure which, as nearly as possible, ended in a catastrophe. Not caring to turn back, I followed a track past the *châlets* of Cavrera, in hope of being able to find a direct ascent over the steep lower ground that enclosed the head of the valley. It seemed as I advanced that among the ledges of rock and grass at the left-hand corner there would be access to the path above. A dubious and attenuated track which led me up in this direction, after giving evidence of design in a few steps notched in the great gneiss slabs, vanished, leaving me to choose between the slabs which sloped up in front and a line of juniper bushes on the left of them. As the slabs at this spot could be walked upon, and higher up seemed to ease off again, I kept to the rocks without investigating the juniper belt. But walking exchanged itself for climbing, and I continued to ascend under the impression that I should shortly gain the inclination above. I came to a spot where I had to raise myself on to a small rounded knob of rock with a slight effort, there being no hand-hold above. From this vantage-ground I was able to repeat the process, still buoyed up with the belief that the easy part would be reached above, and to hoist myself on to the only remaining hold in the neighbourhood,—a strong tuft of grass in a sort of half corner in the slabs,

which supported one foot well, but one foot only. I now found I could go no further. The strata inclined downwards, so that the smooth and crackless slabs overlay one another like the slates on a house roof, and there was no more hold for hand or foot apparent, while the slabs were far too steep for unsupported progression. The next discovery was a much more alarming one: I looked below, wondered why on earth I had come up such a place, and saw at a glance that I could not get down again. If I fell, moreover, it would not be by the line of my ascent, but down steeper rocks and to a lower depth. Generally in a dilemma in climbing there is a sort of instinctive feeling that an escape will be made at last, but now, for the first time, I was seized with a sentiment akin to despair. One chance only remained, and that was to take off my boots and stockings and try the slabs above.

The stories of extraordinary predicaments in the Alps one is apt to receive with some incredulity. I never altogether accepted the tale of the chamois-hunter's gashing his feet, and needless to say it did not occur to me to imitate him in this particular. For the rest, I can only promise the literal narration of circumstances *as they presented themselves to me at the time*. It is, indeed, sufficiently sensational without exaggeration. Well, it appeared at first impossible to take my boots off: I was facing the rocks with one toe on the turf, and the necessary manipulation could not be accomplished. What was to be done? This was, perhaps, the worst moment of the whole as far as sensation went. However, by turning round and planting my heel on the tuft and my back on the rock, I found myself in a secure and tolerably comfortable position. I now set to work and slung my boots separately round my neck as I took them off, pocketing the socks. All was done with deliberation; the laces were as usual untied with the button-hook in my cherished knife, and the latter was carefully returned to my pocket with the thought that if it went down it should be in my company. Meantime the necessary rigidity of position had to be preserved; there was only room on the turf for one heel, and for the point of my ice-axe, for which there was no other possible resting-place. Its preservation, indeed, that day was wonderful; at one time I felt a momentary temptation to throw it down in order to better the hold with the hand, but this would not bear a second thought.

I now lost no time in placing myself on the slabs. I found that I dare not move on them in an upright position, and had to seek support with both hands. My condition was not an enviable one, and in no direction could an effort to proceed be

made without danger. The situation was as follows: If I could manage to advance in front, I should, eventually, reach the more easily inclined slabs, on which I could walk; but then it was some way. If I could cross the much shorter interval (some fifteen feet) to the right, I should reach a grass band below the rocks at the side; but then there intervened a broad black glistening streak, where waters oozed down and where to tread was fatal. Suddenly, without any warning, I found myself going down. I remember no slip, but rather that it was as if all hold gave way at once under the too potent force of gravity. Anyhow I was sliding down the rocks, and that helplessly I made, I believe, little or no attempt to obtain fresh hold; I simply remained rigid in the position in which I was, waiting for the fatal momentum to come which should dash me below. The instants passed, and at each I expected the momentum to begin. I felt quite a surprise when, instead, the sliding mass slowly pulled up and came to a stoppage. The scales of fate had been most delicately balanced, and a hair's weight in the right one decided that this paper should be written. Had I floundered, like a non-swimmer out of his depth, I must have gone down; but the first moments of despondency past, the opening for action had once for all brought with it that species of mechanical coolness which is the happy concomitant of so many forms of habitual physical occupation.

If it be asked, what were my thoughts when I was going down, I can only reply that they chiefly amounted to a sort of dull feeling that I was actually in for a fall, being concentrated on waiting for its inevitable commencement; and that there was no such terror or disagreeable realisation of the situation as people are apt to assign to such moments. Such realisations exist most deeply in the imaginations of the non-combatants outside the fray. During the whole affair my attention was mainly directed to the physical combating with difficulties, and the passing reflections were partly indifferent, partly frivolous. A sort of acceptance of the position, indeed, possessed me, which almost amounted to a melancholy complacency; and, at most perhaps, the customary 'When I get out of this' was changed as fast as it rose up in my imagination into a sadder 'If ever.' It was the feeling of the gamester or the soldier surprised at last by adverse odds, intent on his craft as at other times, but with a new and melancholy consciousness.

My first thought when I came to a standstill—I cannot have gone more than a couple of feet at most—was what I could do

even then, with no more hold than before? But I placed myself again in my old position on the tuft; and reflecting that if I had been intended to go down I should have gone then, and almost feeling as if, having escaped that extremity of risk, I had a sort of security for the rest, I resolved without further hesitation to make a determined effort. I once more raised myself on my feet and decided to make a push across the slabs to the grass belt at all hazards; possibly, in case of slipping on the way, I might be able to make a desperate sort of rush for it. I now found two unevennesses in succession, which would allow the side of the foot to rest in them with some chance of staying, while I moved my body along, there being at no time hold for the hand. The second of these slight hollows was fortunately in the dread bank of moisture itself. Below, the rocks shelved away to a steep fall, in front the grass tufts smiled on me nearer and nearer. While I was feeling along the slabs with the hand that held my ice-axe, the latter by chance fixed itself in a cavity that would otherwise have escaped my notice. It was just about the size and depth of a half-crown, and could not have been caught by the fingers, but the rigid iron stuck in it. This was perhaps the first bit of direct hold I had. A yard further on was another of the same size. But now I had passed the wet rock and was nearing the grass, and carefully launching my ice-axe, so as not to disturb my balance, I hooked it in the grass, and in another moment had reached its hospitable tufts. Creeping up the side, I at last found *terra firma*.

In less than an hour from the rocks I was on the pass. The Forcarella Cocco is 7,011 ft. in height, and commands a good view of the Basodino. The proper descent leads directly down, keeping a little to the right at first, and seemed easy. I wrongly went off to the left, and lost much time in vexatious struggles with long-armed sprawling bushes. A short way below, the track passes a chalet, and then zigzags down slightly to the left to a bridge across the stream. Hence a good path continues along the very steep side of the valley at a considerable height. I was traversing this in the dim shade cast by an unseen moon, when I was abruptly made conscious that I was standing, or about to stand, vertically over a precipice; the narrow path bending away from me to one side, and being carried on timber supports along the face of a cliff. As it was quite unprotected, it was not an agreeable reflection that a heedless step might have plunged me into the black depths below. The valley, as far as I could judge, is not of much interest; but the view of the Val Lavizzara from the opening appeared to

be very fine. Its greatest ornament was a noble fir not far from the head. There was a group of three splendid trees standing out in lonely grandeur by the path, having braved all the storms of winter in this savage vale for centuries; but one was pre-eminent, rising straight to a height of 100 ft.*

Above Cavergho the main valley is called the Val Lavizzara; its scenery as far as Peccia is beautiful and varied. Comfortable night quarters are to be found at a pleasant little inn at the latter place.† The situation of Peccia is very much prettier than that of Fusio, which is wild and pleasing, but outside the characteristic beauty of the district. The finest walk from Peccia to Fusio is by the Val Prato and the side pass above mentioned.

The Val di Peccia, saving a lovely waterfall in its lower portion, is best seen from the village from which it derives its name. The ascent is long and tedious. Two passes lead from the Alpe della Bolla at its head. (1) Passo di Sasso Negro to Lago di Naret, in Val Lavizzara: a low pass, quite easy and traced on the map (sheet 491. See 'Alpine Guide,' p. 311, 313). (2) By Lago Nero to head of Val Bavona: a higher and more laborious pass unnoticed on the map (sheet 495), which wrongly plants a barrier of rock where the gap lies. A guide is requisite for ordinary pedestrians on the Bavona side. A sheep walk is followed along the precipitous right bank of the lake, on leaving which the way lies uniformly in the direction of the Lago Bianco, joining the track from the Cristallina Pass above the ch  let of Pioda. The pass may be reached from the Passo di Sasso Negro by crossing the intervening rock plateau without descent to the Alpe della Bolla.

Fusio possesses the best inn above Locarno. I found a veritable *chef de cuisine*, who seemed glad to have some one for whom to exercise his skill. The prices were very moderate (1880). When I was leaving the district on the occasion of

* Mr. Gosset informs me that this is the finest tree he had seen in the Alps: height 30 m.; diameter of trunk 1 m. 80 at height of 1 m. 30; diameter of one of roots 1 m. 20; remarkable for sending up a vertical stem from a side branch, which is very rare in a tree of this species (*Abies pectinata*, or Silver Fir).

† Albergo Patocchi at the lower end of the village, the best inn in this part of the valley. It has five good beds and a second sitting-room. I may here mention that when I last visited Val Maggia in 1880, dissatisfied with Del Ponte's, I made trial of the 'Restaurant del Basodino,' at Cevio, and now recommend it as the best inn in the centre of the valley. The prices are a model of cheapness, and Maestretti the most obliging of landlords.

my first visit to the valley in 1879, impressed by the formidable account given by the guide-books which I consulted of the difficulties of the direct passage to Airolo, and my map not embracing the ridge, I took a man from Fusio to the top of the pass, being assured at that place that further aid was not requisite. But I found the 'Passo di Sassello,' as it is called, quite easy. In fact, a mule track was some time ago constructed over it, and though this is dilapidated, the path is well marked near the top on both sides; and, so far from there being the difficult rocks I had expected, the ground is throughout of a perfectly easy nature. The way down to Airolo may readily be found, but in ascending thence a person without correct information would do well to take some one to point out the way to the top of the pass.

We turned up the hillside about $\frac{1}{2}$ hr. above Sambucco, just after passing a clump of larches in the river-bed a little below Corte, following a small track ascending obliquely to the left without waiting for the zigzags marked on the map. There was no variation in the direction till the ridge which conceals the pass from the side of Sambucco was rounded, when the gap lay before us. My conductor called it 3 hrs. to the top of the pass, which is 7,697 ft. in height; how much less than this we should have taken could I have kept pace with him I can only conjecture from the squirrel-like activity which he seemed capable of exerting on the steepest path; as it was, I was brought there in a melting condition in less than $2\frac{1}{2}$ hrs. The descent to the bridge at Airolo occupied 1 hr. 40 min. The path edging off to the left away from the torrent, round a shoulder which conceals the pass from below, continues in the same main direction. After passing the Alpe Ravina, a white house will be seen below a wood, for which a straight course should be made. Hence an excellent mule path goes off to the left past the village of Nante, to a bridge opposite the tunnel works. The Basodino is well seen from the top of the pass, which is the one described in the 'Alpine Guide.*' There are three other passes from the valley to Airolo.

(1) A nameless pass above the Alpe Ravina suitable only for climbers. In ascending from Airolo, the Sassello route is followed to the foot of the Alp, when a direct ascent is made to the little cirque enclosed by cliffs where the pass is shown on the map (sheet 503), but wrongly placed in the centre. It

* The description refers to the more circuitous track on the north side indicated on the map (sheet 503).

is really a passage in the rocks outside the cirque, starting from the ridge west of the latter. Casone lies directly below, and is easily reached by the ridge descending from the summit west of the pass.

(2) Passo dei Sassi, a useful pass which may be safely traversed by any pedestrians accustomed to scrambling. From Airolo the route, mounting to Alpe Piscium, follows up the grass ridge left of this till it abuts on the cliffs. Then turning under the cliffs it ascends obliquely to the right in one uniform direction along terraces of shale and grass to a gap immediately west of the Poncione di Mezzodi (the first summit east of the Vespero). I placed a cairn on the top, and two below to mark the route. On the south the route starts from the châteaux of Garzonera, and cannot be missed, as it continuously skirts the line of cliffs of the Mezzodi. The short but steep grass gully under the gap may be avoided in descending on this side by scrambling over the tooth of rock west of it. There is an excellent view of the whole St. Gothard group and of the sources of the Maggia in the snows of the Cristallina.*

An interesting excursion from Airolo is to cross this pass and return by the Passo di Naret. The Poncione di Vespero, which is quite easy on this side, and, being the highest summit on the ridge west of the Campo Tencia, commands a fine view, may be included in the walk: the track connecting the châteaux of Garzonera and Forné must, however, in any case, be joined by returning to the ridge east.

(3) Passo di Naret, an interesting and picturesque route, with good tracks, described in the 'Alpine Guide,' but not sufficiently praised: the Lago di Naret, with its broken headlands and smiling pasture shores, and broad snowfield in the background, and the waterfall below it are both charming. The pass may be reached in $1\frac{1}{2}$ hr. from the valley bed. From the châteaux of Cristallina the stream should be crossed to the Alpe Pian di Peccia, whence a path agreeably traverses the hillside and descends to Fontana.

The finest excursion in this district is to traverse Monte Cristallina from Alpe Robiei to Fusio. From the central position of the peak, the view is of universal interest. At Airolo the Hôtel de la Poste is cheap and comfortable, and, from the promptitude with which meals are served at all hours, affords excellent headquarters to persons wishing to explore the district. The best inn above Airolo is at Ossasco.

* The mention of this pass is anticipated in 'Italian Alps,' p. 349. It is marked with curious felicity on the map (sheet 491).

I left these secluded valleys of Ticino with regret. I had been wandering in a charmed land intoxicated with the beauty of nature. The weather had been as beautiful as the scenery. October (it was now the 29th) had been a glorious month. On one day only did I experience rain. Day after day in long succession brought that perfect weather so dear to the mountaineer. For hour after hour I could sit sketching, in warmth and comfort, in the calm air and genial but not oppressive sunshine. I now seemed to have changed clime no less than scenery, for cold and clammy mist hung over the St. Gothard as I toiled up its bleak and ugly slope. It was but the previous night that I had been shouting with very delight as the glorious moonlight that so peculiarly becomes the wooded luxuriance of the Ticinese valleys, bringing out at every bend of the Val Lavizzara some fresh group of beauty, caught some interposed chestnut by the roadside from behind, and turned each quivering leaf into sparkling silver. Like a dream already were the bright skies and beautiful trees and simple folk across the Sassello.

NOTES ON OLD TRACKS, BY DOUGLAS W. FRESHFIELD.

III. Round Monte Rosa.

A NEW era is at hand for the valleys and mountains on the southern side of Monte Rosa. English travellers, it is true, still as a body resist their charms, but the influx of Italian visitors has sufficed to create good inns, and when, as will be the case in a few summers, easy access is combined with excellent accommodation, even the present generation of Alpine travellers, perhaps the most imitative and gregarious that has ever existed, must yield to seductions lying so close to them.

Val d'Aosta and the neighbouring valleys are being opened to the world. In the first place a railway is in construction up the main valley as far as Aosta—where all lovers of the Alps must earnestly hope it may stop. The picture of a tunnel under Mont Blanc and the valley of Chamonix turned into a goods-station has charms, however, for some strictly utilitarian minds, and political reasons give a chance that the scheme may some day be carried out in preference to the Simplon tunnel, though what practical purpose either would serve which might not be equally well met by laying a double line through the Mont Cenis, it is difficult for the uninitiated to understand. A railway, however, as far as Aosta will be useful to Alpine travellers. It will soon be supplemented by good car-roads up the lateral valleys—that to Val Tournanche is probably by this time finished; that through Val Challant and Val d'Ayas was, in 1879, making rapid progress; the road of Val de Lys, the most arduous, was only staked out, and is not expected to be completed for several years.

The number of Italians who travel in these valleys is a curious proof of the spread of the love of the Alps. They wander in happy families, parents and children, daughters as well as sons, climbing briskly over the passes, and their demeanour is a pleasant contrast to that of the ordinary Alpine tourist. For their use a local literature is springing up. The spirited volumes called '*Albums d'un Alpiniste*,' illustrate charmingly the landscape and the people. For more practical ends there are pocket guide-books for each district—'*Gorret and Bich*' for the general traveller, '*Corona*' for the mountaineer in Val d'Aosta.

Col della Muanda.—The most beautiful route, and by far the most attractive to a mountaineer, from Alagna to Varallo, is still almost unknown, although it is mentioned, if not praised to the full of its deserts, in the '*Alpine Guide*.'

The Col della Muanda leads directly from Alagna to Val Piccola, crossing the dividing chain immediately S. of the bold and prominent peak of the Tagliaferro (9,781 ft.) There is a well-marked path over the pass. After crossing the river the track mounts in long steep zigzags through brushwood to a group of chalets commanding a noble view of Monte Rosa. The Alp occupies a mountain basin, above which the Tagliaferro rises in exceedingly steep slopes. A high shoulder intervenes between the peak and the pass. The path to the latter is easy to find. The col itself is one of the most picturesque of the lower passes of the Alps. A little picture of the Virgin has been set in the natural rock on one side of a notch or gap in an extremely narrow comb. This gap, according as the traveller shifts his standpoint, serves as a frame for the snows of Monte Rosa, or for a rich and glowing Italian landscape. To the east the eye follows the stream of Val Piccola in all its meanderings towards the soft wooded folds of the hills of Varallo, while in the distance a broad expanse of the Lombard plain, and on the far horizon the snows of the Disgrazia and Bernina, add a sense of illimitable space to the lovely detail of the foreground. The view from the Col d'Ollen, fine as it is, has none of the grace and picturesqueness of that which I am here attempting to describe.

Tagliaferro.—To climb this peak from the col it is first necessary to turn its southern shoulder which dominates the pass. The slopes on the W. flank are very steep, but sheep tracks aid the traveller, and in an hour to an hour and a half (according to pace) from the col the peak is gained. All but one (the Zumstein Spitze) of the peaks of Monte Rosa are visible, a large portion of the Macugnaga face being seen behind the Monte delle Loccie. To the east the view is uninterrupted, and for so low and easy a peak, I think, in this neighbourhood incomparable. The foreground of Italian hills and valleys is singularly beautiful in its grouping. The horizon in this direction is almost the same as that seen from Monte Rosa itself. In the Bernina group I recognised every peak and pass in the ridge between Piz Chaltagn and Piz Bernina. The Adamello and its mimic, the Corno Bianco, were quite distinguishable.

We descended the face of the peak to the Alp without going round by the pass. Very steep grass slopes, where, I will not say a slip, but 'a roll would have been fatal,' led us to a snow-trough suited for glis-

sades. Below the Alp we made an excursion for *edelweiss*, which grows in certain spots in great profusion. We collected a bunch of flowers (not roots) which would have been a good day's work in the Engadine.

I cannot give 'times' for the mountain very accurately, as we alternately hurried and loitered. I should put it at four hours up and two hours down for active Englishmen from Alagna.

Having previously crossed the alternative Col di Moud, N. of the Tagliaferro, I can with confidence say that in point of scenery the Col della Muanda is preferable. It is higher, steeper, but less circuitous than the Moud.

Val de Lys.—Those who already know the Col di Ranzola, or wish for a day of varied and exquisite valley scenery, may take with profit the circuitous route by the valleys from Gressoney to Brussonne—down Val de Lys and up Val Challant.

There is a slip worth noting in the 'Alpine Guide.' The water-worn gorge with a high bridge is half an hour *below* (not above) Issime. The romantic scenery of the Val de Lys lies between this point and Pont St. Martin. The road is a terrace path—needless to say, a *pavé*—under the shade of luxuriant chestnut forests. Villages or dusky vine-overgrown cottages are thrown about at the base of bold spines of red rock. A series of beautiful landscapes leads up to the most beautiful of all, the opening upon the great valley, rich in the vegetation and colour of Italy.

Fort Bard, which is passed in the short piece of Val d'Aosta driven up between Pont St. Martin and Verrès, everyone who knows Turner's sketches is glad to see. At Verrès travellers should find time to visit the old castle of Issogne, built by one of the Challant family, a most interesting specimen of the residence of a Burgundian noble of the fifteenth century. It has, by a good fortune rare in Italy, recently fallen into the hands of a man of wealth and taste, who has restored and furnished it appropriately, recovering as far as possible from the neighbourhood all objects which had originally belonged to the house.

Val Challant—as the lower part of the valley, known at its head as the Val d'Ayas, is called—has not hitherto been described in any English work. It is entirely unlike its neighbours, Val de Lys or Val Tournanche, except in being entered by a long and steep ascent. Above the zigzags lies a broad basin, sloping gently from the low crest which divides Val Challant from Val d'Aosta. The landscape is unusually rich, open and romantic. Fields of Indian corn and lawns tinted with the autumnal crocus alternate with groves of chestnuts and noble walnuts. From the crest of the mountain bursts forth a copious cascade (formed by the waters of the canal which irrigates the hill-sides), looking at once artificial and perfectly in its right place, like the waterfalls in Poussin's pictures. It is not until after a steep ascent, marked by a chapel, whence, looking backwards, there is one of the finest views, that the valley becomes conventional with a range of mountains on either side and pine trees at the bottom. It is, however, a very pleasant and varied walk as far as Brussonne, the village on the frequented hill-track by the Cols de Ranzola and de Joux, from Gres-

money to St. Vincent. The houses in this district, unlike ordinary Alpine dwellings, are often semi-attached. One enormous roof over-shadows a double set of low living-rooms and barns, and one outside stair gives access to two doors. A few years ago the two rival village inns were thus associated, and two signs swung in friendly rivalry on the same balcony!

The Col de Joux is a well-known track. I feel sure that a walk of extraordinary beauty might be found by taking the path which bears southwards from the glade on the top, and after skirting for some distance the spurs falling to Val d'Aosta, and enjoying thoroughly the noble prospect towards Mont Blanc, crossing the crest near the waterfall spoken of above, and descending upon the rich woods and meadows of Val Challant. The paths on all the lower crests round Châtillon (*e.g.* that between Val St. Barthélemi and Val Tournanche) command some of the noblest mountain scenery in the Alps, and it is a reproach to the enterprise and intelligence of the crowd of travellers who haunt Zermatt, that they should not be better known now than they were twenty years ago, when Mr. King visited and described them.

Inns.—The inns at Châtillon have long had a bad name. It is therefore worth while to remark—and to ask guide-book editors to note—that the Hôtel de Londres has now fallen into good hands and can be thoroughly recommended.

The inn on the Col d'Ollen (9,500 feet) offers mountaineers as good a starting-point as the Rifel for Monte Rosa or the Lyskamm (there is a nasty hut higher up for those who like it), and to ordinary travellers a chance of seeing one of those secret and sublime beauties which nature generally reserves for those who earn them—a sunrise from the height of 10,000 feet. The inn at Alagna requires no recommendation. The Hôtel d'Italie at Varallo fell, last year, into the Guglielmina's hands, and is well kept. Delapierre's, at Gressoney, is one of the most comfortable houses in the Alps. The second inn there is also well kept. The beauty of Gressoney is, I think, of a less romantic order than some descriptions may suggest. But St. Jean lies in a pleasing pastoral landscape, and its position, halfway between the snows of Monte Rosa and the chestnuts of the Biellese, makes it an admirable centre. The great convent of Oropa, now turned into a sanatorium where travellers are lodged *gratis*, is one of the most picturesque and singular pilgrimage resorts in Italy, and almost as well worthy of a visit as Varallo, with which it is connected by a beautiful hill road, hitherto ignored by travellers.

NEW EXPEDITIONS—(*continued.*)

Bernese Oberland.

BALMHORN (3,688 mètres = 12,100 feet) FROM THE GASTERENTHAL.
September 2.—Mr. A. E. Craven, with Johann Ogi of Frutigen and Gilgian Ogi (Sohn) of Kandersteg, made this ascent, which is believed to be new. Starting at 4.30 A.M. from a bivouac (Wild Elsigén) among

the precipitous rocks on the south side of the Gasterenthal, 4 hours from Kandersteg, they reached, over avalanche *débris*, the moraine on the right bank of the Wild Elsägen glacier, and followed it almost up to the rocks. Then bearing to the left they climbed by a couloir, steep rocks, and ice slopes, to the final arête of the peak, when all difficulties ceased. The summit was reached at 1.20 P.M., the party having halted 40 minutes *en route*. The descent was made to Kandersteg by the usual way.

This route is not recommended, as, unless the snow is in exceptionally good condition, the risk from avalanches would be considerable.

Monte Rosa District.

VARIATION OF THE COL TOURNANCHE.—July 8.—Mr. W. W. Simpson, with Ulrich Almer and Franz Burgener, reached the summit of the Col at 8.25 A.M., in just over 4½ hours from the Stockje hut. A dense mist on the Italian side completely hid from view the line of descent down a very steep snow slope, which almost immediately turned into an extremely steep snow couloir. At 10.15 A.M. they halted for lunch on some rocks near the base of the couloir, and at 10.45 A.M. reached the small glacier which lies between the Glacier du Lion and the glacier down which lies the ordinary Col Tournanche route. The ice was finally quit-
ted at 11 A.M., and Breil reached at 12 (noon). The weather was bad, but the snow in good order; the slopes on the north and the couloir on the Breil side are so excessively steep that in an unfavourable state of the snow the expedition would be a very dangerous one.

Bernina Group.

PIZ BEVERS (3,237 mètres = 10,621 feet). August 24.—Messrs. E. S. Balch, C. C. Binney and H. W. Seton-Karr with Christian Tuffli of Silvaplana, made what is believed to be the first ascent of this peak. Starting from Campfer they mounted in 2 hrs. to the lake in the Val Suvretta, then bearing north they reached a glacier and crossed to the foot of the peak, the south-west ridge being gained by means of an ice couloir exposed to falling stones, and the summit in a few minutes more, in about 3 hrs. from the lake. The mountain is the highest in the range between the Val Bevers and the Val Suvretta and is marked 3,237 mètres on Dufour's map; it was christened Piz Bevers. On the descent they found an easier way, keeping for 10 min. along the west arête and then regaining the glacier by easy rocks.

Brenta Group.

BOCCA d'AMBIES (9,515 feet). August 26.—Messrs. W. W. Ford and Henry Rae, with Antonio dalla Giacoma of Pinzolo as guide, crossed from Campiglio to Molveno by a route south of the Cima Tosa, involving a pass which they believe to be *new* in the strict sense of the word. It is well suited for travellers going southwards from Campiglio to Trent or Riva, and furnishes an alternative route to the Bocca di Brenta to Molveno, strongly to be recommended to those who would make the tour of the Tosa.

The party left Campiglio at 5.50 A.M., descended to Brenta Bassa,

and after pursuing the beaten track as far as the highest *malga* in Val di Brenta climbed by the obvious route to the snowfield at the head of the Camozzi glacier. Leaving Mr. D. Freshfield's Bocca dei Camozzi to their right, they bore to the left hugging the cliff, and ascended a steep snow slope, with the aid of the axe, to the pass, which is about twenty-five feet wide, and lies between an impracticable cliff of the Tosa on the left and a rugged and steep ridge circling round to the Bocca dei Camozzi on the right.

They reached the sharp edge of the snow col at 12.5 P.M., halted 35 minutes for lunch on a rocky perch in the left-hand corner, and then cut a ladder down a narrow couloir to the glacier at the head of Val d'Ambies. The cliffs at this point form a cirque and are very picturesque. Being threatened with mist they pushed on without delay down the right side of the glacier until stopped by crevasses; then down the left side of the valley until, in the fog which had become very dense, they appeared to be on the brink of precipices which would certainly have required consideration. Antonio, who had never been in this region before, made a cast to the right and led scientifically round the cliffs and down the middle of the waste and *débris* to some projecting tusks of rock above Malga Prato, and about 1,450 feet below the pass. When the fog fortunately cleared off, villages could be seen at the foot of Val d'Ambies and also the road to Le Sarche, going straight away in the distance; and the second pass was in sight on the left nearly an hour.

This pass, well known to the shepherds and already described,* was gained (height 8,030 feet) at 3.20 P.M. by a rocky path, just as a thunderstorm burst in the Val d'Ambies. Below it is a flat meadow, containing curious holes, shaped like cauldrons, six feet or more in depth and five to nine feet in diameter, probably due to the action of a sub-glacial mill or cataract. Thick clouds came down and made delay unadvisable; the upper *malga* was missed, and the party went across and down the Alpe Ceda through a drenching thunderstorm to Malga di Villo; reached at 5 P.M. The rest of the way was a good path, and the hospitable inn at Molveno was reached at 6.15 P.M.

Antonio proved himself an able guide and a pleasant companion.

Where time is an object a wayfarer will probably reach the Bocca d'Ambies in 5 hrs. from Campiglio and descend in $3\frac{1}{2}$ hrs. more to the foot of the Val d'Ambies, perhaps less; but the above-named party were tempted by the extraordinary beauties of the scenery to linger long and often. The route abounds in surprises. Not for one moment could it be called dull. The pinnacles and spires seen from the picturesque Val di Brenta were distanced. The Camozzi and Ambies glaciers are girt with massive cliffs, which present an impassable front. The rounded crags halfway down the Val d'Ambies, pushed out into bastions, look like Cyclopean steps. The last and most perfect surprise was when the mist divided on the Ceda Alp, and the blue lake was disclosed several thousand feet beneath, locked in on all sides by mountains.

* *Zeitschrift des D. u. Ö. A. V.*, vol. vi. p. 107.

Mr. D. Freshfield has stated that his Bocca di Val d'Ambies lies some distance south of our pass, is reached on the Val Nambino side by the glacier of Val d'Agola, and does not touch the Val d'Ambies glacier. When used from Val di Brenta the Bocca dei Camozzi has to be first passed in order to reach the Agola glacier.

It is somewhat difficult to find an appropriate name for the new pass, but it will be convenient that Mr. Freshfield's pass,* as the only one leading from the Val d'Agola glacier, should henceforth be called the Bocca d'Agola and ours the Bocca d'Ambies.

PALA † DI SAN MARTINO (3,244 mètres=10,644 feet). September 2.—Mr. W. W. Ford climbed this peak with Michele Bottega, who knew the way, as he had acted as porter on one or other of the four previous occasions on which it had been reached.‡

They left the inn at San Martino di Castrozza at 4.10 A.M., traversed the wood in the Val di Rosa, keeping on the left side round the base of the Rosetta, and then held across the head of the valley at a higher level as if making for the Passo di Ball; after that to the left, over slopes of white rubbish and ice to the upper field of the small glacier. With the northern face, the grandest side of the Pala, on the right hand, they crossed the ice towards the ridge which connects the peak with the 'Plateau,' and found the *bergschrunn*, which divides the glacier from the couloir leading up to the ridge, about six feet deep, and not difficult: the bottom was firm except in the left corner, where a snow causeway approached the upper edge. The couloir above it was rather steep and the snow very hard; constant step-cutting was necessary, and it was 8.10 A.M. before they sat down to breakfast on a steep little island very near the top of the couloir, at a height of about 9,000 feet, close to the bank on the right or south side. Bottega here put away his axe and spare provisions, and the party climbed up the crags immediately on the right, keeping straight up and leaving the pinnacles on the ridge to the left: the rocks were exceedingly rough as well as steep, and the corners which tempt the hand and foot loose and unsafe. Large and small stones were dislodged at almost every step, and we had to move in turn. The work was hardest for the first few hundred feet. In 1.10 from the last halt the ridge was gained by a most intricate course; from this point the way was no longer difficult. The crest is undulating (running north-east and south-west) and about 100 yards long, and they came up at the northern end at about 10.5 A.M. in 5½ hrs. from the inn. Two cairns, one very tall, the other low and stumpy, stand a few feet below the summit and overlook the San Martino valley. There is a third cairn further down the ridge, which was not visited. A bank of snow runs longitudinally down the northern side of the crest.

* See *Alpine Journal*, vol. vii. p. 108.

† Cf. *A. J.* ix. 55, 307.

‡ The first ascent was made on June 23, 1878, by Herr J. Meurer, and the Marchese A. Pallavicini (*Oesterreichische Alpenzeitung*, 1879, p. 195; *Alpine Journal*, vol. ix. p. 165); the second on Aug. 11, 1878, by Herr Issler (*Alpine Journal*, vol. ix. p. 307); the third on Aug. 26, 1879, by Herr and Frau Tauscher (*Oesterreichische Alpenzeitung*, 1879, p. 226); the fourth in August 1880, by Herr Lederer of Gräz.

The weather permitted a splendid view of the Orteler, Adamello and Glockner groups; the whole dolomite region was clear and cloudless, and beyond the Pavione the plains of Italy were in sight. Venice was invisible. The appearance of the Cimon della Pala on this side was very fine; its crest was one of the grandest features in the scene, and it shuts out nothing.

They spent 1 hr. and 20 min. over their observations and a good lunch, and then descended to the couloir in 2 hrs. by the same route, the snow being nearly as hard as on the ascent, and regained San Martino in $4\frac{1}{2}$ hrs. from the top. Bottega proved a very good guide on the rocks and a cheerful companion.

'I think the alternative route to the head of the couloir round the Rosetta peak and across the Plateau must be quite as short as that by the Val di Rosa. Making the tour of the Pala the day before with a friend as well as Bottega, we reached the plateau in $2\frac{1}{2}$ hrs. and strolled very quickly (I think in about 40 min.) to a spot on the cliff facing the mountain, 300 feet above the island in the couloir. This cliff seen the next day seemed practicable. The path so far is cooler and easier than the approach by the narrow and rugged valley, and the views are wider.'—W. W. F.

Stubaithal Group.

FERNAU JOCH (c. 10,235 feet). *August 12.*—Messrs. W. W. Ford and H. Rae with Franz and Josef Pfurtscheller as guide and porter, starting from Ranalt at 3.30, followed the usual route to the Dresdner Hütte of the 'D. and Ö. A.-Verein,' reached at 8 A.M., and attained the pass at 10.50 A.M. by the Schaufel Ferner and by coasting along the base of the Schaufel Spitze. The weather was very misty. They then effected what is believed to be the first descent from the pass into the Windacherthal. Bearing to the right and then to the left under a snow cornice, they descended very steep but not difficult cliffs and slopes of *débris* (exposed to falls from the aforesaid cornice) to the Gaiskar Spitze Ferner which was crossed in the narrowest part, and the pastures in the Gaiskarthal reached at 1.10 P.M. by the crags on the right bank of the Pfaffenferner. The Windacherthal was soon gained, and the party arrived at Sölden in the Oetzthal at 5.30 P.M.

REVIEWS AND NOTICES.

Works on the French Alps.

PLACE AU GÉANT! In any summary, however short and imperfect, of recent publications under this head, we feel naturally bound to commence with Mont Blanc, not only as being the highest mountain in civilised Europe, but because the history of the early ascents and of the village at its foot has been the subject of fresh and detailed investigations. Mons. Durier publishes a second and revised edition, in

a cheaper form, of his classical work.* This edition has no illustrations and only a single map—that of the different routes up the mountain: but it is in a far more handy form than the original work, and has been corrected throughout by the author, who has also profited by various notes sent to him, and has brought his book up to date by describing Mr. Eccles' route from the Brouillard glacier, and the death of a porter on the glacier du Mont Blanc (p. 338). Amongst many additions we may mention the discovery of an allusion to the precipices of the 'Montium Maleetiorum' (in which it is easy to see the Mont Mallet) in the Breviary of the Cathedral Church of Aosta, which is said to date from the eleventh century,—in any case, the earliest reference known to the range of Mont Blanc (p. 9, note). Again Mons. Durier discusses (pp. 40–1, 147, 311) and rejects the traditions of very ancient passages of the Cols du Géant and de Miage, a subject to which we shall have occasion to refer in noticing Signor Vaccarone's recent contribution to Alpine history.

Mons. Durier has derived several interesting details from the papers of Jacques Balmat, which have been placed in his hands (pp. 101 note, 120). Bordier and Albert Smith have received special attention from our author, who also communicates some curious facts as to the ascent by Colonel Beaufoy in 1787, the first Englishman who reached the summit (p. 146). We notice also that the Alpine achievements of Tschingel and particularly her ascent of Mont Blanc are duly recorded (202 note, 258). There is one misprint which may lead to confusion: on p. 97, note 1, for '1763' read '1793.' We have already † expressed our opinion of the great value of this work, and in its new and revised form it is even more worthy than before to be placed on the shelves of every lover of mountains side by side with the narratives of De Saussure, Tyndall, and Whymper.

Among the recent publications which Mons. Durier was able to lay under contribution for his new edition was the pamphlet of Mons. Th. Dufour,‡ the nature of which is sufficiently indicated by the title. Hitherto only the English translation, published in London in 1744, was known, but Mons. Lalanne discovered the original MSS. in the library of the 'Institut de France,' and communicated them to Mons. Dufour. It seems that there are considerable differences between the two versions, especially in the case of Martel's narrative; and Mons. Dufour has done well to print the original text, which he has enriched with a most valuable introduction and notes, giving many interesting particulars as to these very early visits to one of the great mountaineering centres. It is much to be regretted that but a very limited number (100) of copies of this important contribution to the history of the Alps has been printed.

* *Le Mont-Blanc*. Par Charles Durier. Ouvrage couronné par l'Académie française. Deuxième édition. Paris: Sandoz et Fischbacher, 1880. 3 frs. 50 c.

† *Alpine Journal*, vol. viii. p. 457.

‡ *William Windham et Pierre Martel: Relations de leurs deux voyages aux glaciers de Chamontix (1741–2)*. Texte original français, publié pour la première fois, avec une introduction et des notes. Par Théophile Dufour. Geneva: Bonnant, 1879. (Reprinted from the *Echo des Alpes*.) 1 fr. 50 c.

Readers of Mons. Durier's book must often have been tantalised by references to the rich collection of documents relating to Chamonix collected by the late Mons. Bonnefoy, and everyone who is interested in the history of the Alps, of which the history of mountaineering is but a single chapter, will rejoice that Mons. Perrin of Chambéry has begun to edit and publish the cartulary of the Benedictine Priory of Chamonix, a cell of the great abbey of S. Michel de Cluse, near Turin.* They were mostly found by Mons. Bonnefoy in the archives of the church of Sallanches, and number nearly 300, of which Mons. Perrin gives us in the first volume 103, ranging from 1090 to 1400. It is impossible to overrate the importance of this publication, which will repay the most careful study, and throws light on innumerable obscure points of historical interest. We hope Mons. Perrin will not make us wait too long for his succeeding volumes.

Herr Meurer, the editor of the very useful '*Oesterreichische Alpenzeitung*,' sends us a reprint of his lecture on Mont Blanc,† in which he gives a short history of the ascents and accidents, and a spirited narrative of his own ascent. The brochure shows the widespread interest felt as to the 'Monarch of Mountains.' We may also note the appearance of a new and enlarged edition of the strictly alpine portions of De Saussure's great work in a very handy and convenient form.‡

Signor Corona has written an article § to show the great advantages of the scheme of tunnelling Mont Blanc over the rival project of piercing the Simplon. His figures and statistics seem convincing, but climbers may be excused for hoping that the day is still far distant when Chamonix will become a sort of Swindon with lines to Geneva, Annecy, Martigny, and Courmayeur.

Messrs. Hachette have published a convenient set of geographies of the several departments, written by Mons. Adolphe Joanne, whose name is a guarantee for the accuracy of the statements as to peaks and passes in those volumes which more especially concern the readers of the Journal || They are adorned with engravings, are well arranged and got up, and contain a vast quantity of information in a small compass.

The next book on our list ¶ belongs, perhaps, rather to the class of works on general geography than to the subdivision of alpine topo-

* *Le Prieuré de Chamonix.* Documents relatifs au prieuré et à la vallée de Chamonix, recueillis par Mons. J. A. Bonnefoy, publiés et annotés par Mons. A. Perrin. Volume premier. Chambéry: A. Perrin, 1879.

† *Der Mont-Blanc.* Vortrag gehalten im Alpen-Club 'Oesterreich' zu Wien am 16. u. 23. April 1880. Von Julius Meurer, Präsident. R. Spies, Wien, 1880. (Reprinted from the *Oesterreichische Alpenzeitung*.)

‡ *Voyages dans les Alpes.* Partie pittoresque des ouvrages de M. H. B. de Saussure. 4^{me} édition, augmentée des voyages en Valais, au Mont-Cervin, et autour du Mont-Rose. Paris: Sandoz et Fischbacher, 1880. 3 frs. 60 c.

§ *Mont-Blanc or Simplon?* By Giuseppe Corona. Capaccini e Ripamonti, Rome, 1880. (Reprinted from the March No. of *Minerva*.)

|| *Collection des Géographies Départementales.* Par Adolphe Joanne. Savoie, Haute-Savoie, Isère, Drôme, Hautes-Alpes, Basses-Alpes, Alpes-Maritimes. 1876-1879. Hachette, Paris. 1 fr. each.

¶ *Lecture de la Carte de France.* Le Jura. Par Ed. Berlioux, Professeur de Géographie à la Faculté des Lettres de Lyon. Dumaine, Lyon, 1880.

graphy. It is an excellent specimen of the application of the principles of scientific geography to a strictly defined district, in order to impart, by concrete means, a knowledge of those principles. Our readers will find in it many useful hints which will help them to acquire the power of getting a clear idea of any hilly district from the mere inspection of a map, a task which is far more difficult than is generally imagined, and the extreme importance of which is undeniable. The book is well printed and has two maps. Perhaps Mons. Berlioux may give us some day, what is much wanted, a work treating more specially of *alpine* topography.

Monsieur Guillemin's name is very familiar to all who take an interest in the Alps of Dauphiné and the Queyras. A native of this district, he has done much to illustrate it, especially by his descriptions of his numerous Alpine excursions, and in the little pamphlet before us* describes some curious customs still surviving in the valley of Arvieux (not far from Guillestre), which some will remember as Félix Neff's official residence. A belief in the power of a 'signeuse,' or witch, is still prevalent in the valley, and, as we ourselves heard last summer, is by no means extinct in the far more accessible Val Louise. More remarkable, however, is the distinction of the inhabitants of the commune of Arvieux into 'Gens de la belle' and 'Gens de renom' (or 'sorciers'), fifty-five families belonging to the former, and eighty-five to the latter. This distinction does not rest on differences in religion or in wealth, but on the supposed possession by the 'Gens de renom' of the power of the 'evil eye.' The 'Gens de la belle' form the aristocracy of the district, and call all strangers 'sorciers,' going so far as to include the curé and bishop under this category. That this is more than a mere feeling of dislike is shown by the fact that marriages between members of the two castes are even now extremely rare, and thirty years ago were quite unknown; and this, added to the two religions professed in the commune, and to the effects of emigration, has almost completely done away with marriages in this district. It is a curious survival, worthy of the attention of Mr. E. B. Tylor and of Sir Henry Maine, for it recalls the characteristics of an Indian caste, which one does not expect to find so near home. It is an open secret that M. Guillemin has long been engaged in writing a book on the Briançonnais, and this foretaste of its contents makes one hope that the author's official occupations will soon allow him to complete the work. M. Guillemin adds an account of the first ascent of the Aigu du Ratier, in the Queyras, effected by himself, alone, on October 19, 1879, by a short though difficult climb, the peak having till then enjoyed a high local reputation for inaccessibility.

M. Guillemin is again to the fore in the new volume of the C. A. F. Annuaire,† a stately volume of 700 pages, with three maps and twenty-six engravings. He gives a detailed account of his campaign of 1879,

* *Les Coutumes d'Arvieux*. Par Paul Guillemin. Lyon : Imprimerie générale du Rhône, 1880.

† *Annuaire du Club Alpin Français*. Sixième Année. Paris : Hachette, 1880.

with M. Salvador de Quatrefages (who, we are glad to learn, is rapidly recovering from his serious accident of last summer), of which the most remarkable features were the first ascent of the Monte Viso from the north, after many gallant but fruitless attempts by the same party in past years,* and an attempt on the Écrins from the Glacier Noir, an expedition which M. Duhamel has since achieved,† though by a different route from that here described. We could point out to him that the engraving on p. 70 really represents the Pic Jocelme, and not the Pic Bonvoisin.‡ Among the other important articles, we may note those by M. E. Rochat on the Maurienne and Tarentaise; by MM. Rabot and Carbonnier on the Ciamarella group; and by M. Charlet-Straton on his first ascent of the lower peak of the Dru. Count Henry Russell, MM. Wallon and Schrader continue the narratives of their explorations in the Pyrenees, and M. Brulle gives a short account of a new and direct route up the Vignemale by the Clot de la Hount. Other articles carry us to Greece, the Trentino, Spain, Teneriffe, and Wallachia. M. Thureau discusses the question of the ownership of glaciers, and decides that they belong to the State as *private* property, and *not* as part of the public domains, in opposition to the German theory of the right of the first occupant, and to other theories which would give rights to the riparian owners (as in the case of streams), to the commune, or to the public domain of the State. The two systems last named seem to prevail in Switzerland. M. Venance Payot contributes a detailed analysis of his botanical researches round Chamonix, now extending over thirty-five years. M. Borrel proves by statistics that the Glacier de Gébroulaz, at the W. end of the Tarentaise, has shrunk no less than 1,422 mètres (= 1,806 yards) from 1730 to 1879. It may be pointed out that the ascent of the Grande Motte by the eastern arête was not made for the first time by M. Tissot and his companions in 1879 (p. 661), but by Mr. Blanford's party in 1864,§ and later by the writer's on August 2, 1878. It is to be hoped that every effort will be made to redeem the promise made in the preface of a more speedy publication of the next 'Annuaire,' as it is very inconvenient to be unable to get descriptions of expeditions in time to repeat them in the following summer. The new 'Bulletin' of the Lyons section of the C. A. F.|| shows the continued activity of its members in the French and Swiss Alps. M. A. Benoist describes his adventurous ascent of the Dent Parrachée, starting from Thermignon, in the valley of the Arc, at 6.30 A.M., and climbing up the S. face; M. Doix-Mulaton the passage of the Col de Gébroulaz, and ascent of one point of the Aig. de Polset; and M. Péter ascents of the Grand Paradis and Dent d'Hérens. This publication is far superior to the general run of periodicals published by local sections of any of the foreign Clubs.

* Cf. *Alpine Journal*, vol. ix. p. 353.

† *Alpine Journal*, vol. x. p. 82.

‡ *Alpine Journal*, vol. ix. p. 357; vol. x. p. 140.

§ *Alpine Journal*, vol. ii. p. 188.

|| *Section Lyonnaise du C. A. F.* Deuxième Bulletin. Lyon: Pitrat aîné, 1879.

The next 'Annuaire' on our list,* also, has made its appearance late in the day. Its principal features are papers by Mr. Gardiner on his splendid Dauphiné expeditions of 1879, by M. Duhamel on a well-spent week in the ranges near the Meije, by MM. C. Rabot and H. Vincent on various expeditions, some of them new, made by them; M. Salvador de Quatrefages gives a summary of his Dauphiné wanderings of 1879, and Mr. F. W. Mark (the British Vice-Consul at Marseilles) gives a lively description of his passage of the Col de la Lauze on December 28, 1879, the most striking point in which is his mention of the very small quantity of snow on the high peaks that winter, which was most remarkable through the district. We regret to see that the useful 'Revue Alpine' was not completed in time, and will be published separately.

Some of the sections of the 'C. A. F.,' besides doing good work in the way of exploring unknown or little known ranges, have published collections of photographic views of their several districts. Thus the Briançon section has published a large number of magnificent photographs of the High Alps of Dauphiné,† and more recently 110 stereoscopic slides, representing scenes in the Queyras and near Monte Viso.‡ All these are due to the initiative of Mons. Paul Guillemain, the honorary president of the section. The Barcelonnette (Basses-Alpes) section has also published an album of seventy-five views, of the fine scenery of the valley of the Ubaye, hardly known, as yet, even by name, to English travellers.§ A copy has been presented to the club library. The Gap section too has not been behind, but their photographs,|| though of unusual size and very fine specimens of their kind, confine themselves, except in rare instances, to the minor ranges south of the glaciers of the Pelvoux group. The Isère section promises us no less than four albums of fifty views each, covering the whole of Dauphiné in the widest sense,¶ and has already published a lithographic panorama of the superb view from the Tête de la Maye (a knoll just above La Bérarde) up which it has constructed a good path. It is to be hoped that these praiseworthy endeavours to open up the southern districts of the French Alps will meet with their due reward.

Works on the Italian Alps.

The long-expected 'Guide to the Western Alps' has at length appeared,** and we must express our wonder at the list of valuable

* *Annuaire de la Société des Touristes du Dauphiné.* No. 5. Grenoble: Allier, 1879.

† *Album pittoresque des Alpes Briançonnaises.* 102 vues. Par A. Grand. Lyon: Imprimerie générale du Rhône, 1878. (About 160 frs.)

‡ *Album du Queyras.* 110 vues. Par Jacques Garcin, 50, Rue Childebert, Lyon, 1880. 100 frs.

§ *Album photographique de la vallée de Barcelonnette.* 66 vues. Par C. Rava. Gap, 1879. 80 frs.

|| *Club Alpin Français.* Sous-section de Gap. 20 vues. Par Terris. Gap, 1878. 50 francs.

¶ *Albums:* (1) Oisans—Pelvoux; (2) Grandes Rousses—Belledonne; (3) Taillefer; (4) Dévoluy. 25 frs. each for the first 50, 35 frs. for the second 50 subscribers.

** *Guida delle Alpi occidentali del Piemonte, dal colle dell'Argentera al colle*

facts and details which the authors have managed to pack into so small a compass. No one can deny that a new guide-book, containing notices of recent explorations in the Italian Alps, was very much needed, for Mr. Ball's admirable work, though a marvel for the time when it was first drawn up, has not, we regret to say, been brought up to the present state of our knowledge of the ranges on the Italian side of the great Alpine barrier; and the Italian translation of a portion of his book referring to the Vaudois valleys, though enriched with valuable notes,* must yet give place to the volume before us. In a former guide-book,† Signor Vaccarone, one of the most enterprising members of the Italian Alpine Club, had, with the assistance of Signor L. Nigra, given a complete account of the Cogne district, with notices of the ranges bounding the Val Savaranche on the W., and the Val Locana on the S.W., and the three tributary valleys to the north of the Val Savaranche had been exhaustively described in Gorret and Bich's '*Guide à la vallée d'Aoste*.' Signor Vaccarone, with the help of a new colleague, now continues his minute account of the Italian Alps, including all the ranges on the Italian side of the main chain, starting from the Col Girard just south of the Levanna, and working as far south as the Col de l'Argentière, which connects the Stura and Ubaye valleys. It is of course impossible for anyone save the authors to have verified every detail in this painstaking volume; but the writer of this notice may be allowed to say that, having examined the accounts of the ranges familiar to him from personal visits, he has found the accuracy and fulness of the notices beyond all praise, and can recommend the book as thoroughly trustworthy. There is, however, one point in the arrangement which should be remedied in a new edition. The book stops nominally at the Col de l'Argentière, but the authors have found considerable difficulty in strictly maintaining this limit, and describe the ascent of the Tinibras, one of the northernmost peaks of the Maritime Alps, between the Tinée and Stura valleys. Now the value of the book would be immensely increased and the subject completed, if the southern limit were placed at the Col de Tenda, thus taking in the *whole* of the Maritime Alps so far as they are on the Italian side of the chain. The Tenda marks the natural limit of the Alps as distinguished from the Apennines, and we should then have in three volumes a complete guide to the Italian Alps south of the Little S. Bernard, a region known as yet to but few travellers, though comprising many ranges and valleys of savage grandeur and pastoral loveliness, which need not fear comparison with any other part of the Alps. Is it too much to hope that the French Club will some day publish a similar series for their side of the Alpine chain? Materials for such a work are so rapidly accumulating that they threaten to overwhelm us, unless they

Girard. Con Carta topografica ed illustrazioni. Per A. E. Martelli e Luigi Vaccarone. Pubblicazione della Sezione di Torino del C. A. I. 1880.

* *Alpine Journal*, vol. ix. p. 446.

† *Guida Itinerario per le valli del Orco, di Soana, e di Chiusella.* Turin: Casanova, 1878.

are soon classified and sifted, so as to be available for use on the spot; and thus help on the minute study of every ridge and glacier. Another point which we should like to see amended in Signor Vaccarone's book relates to inns. He gives the names and characters of hôtels in the larger centres only, whereas a similar list for the smaller villages at the head of the Alpine valleys would be of the greatest use.

We regret, also, that it was not thought well to have an entirely new map engraved, instead of republishing the very faulty ~~1850~~ Sardinian survey. A less elaborate map, but one more accurate in its delineation of the peaks and glaciers, would have been far more acceptable. Fifteen illustrations are given, reprinted in some cases from the *Bollettino* del C. A. I. That of the Levanna range and the views from the head of the several Valli di Lanzo are the most valuable for topographical purposes, while the sensational representation of the summit of the western Dent d'Ambin ought to thrill the nerves of even the most jaded devotees of Alpine horrors. We must not omit to mention the excellent glossary of local and technical expressions, though we miss 'Cia,' in which so high an authority as Professor Ascoli sees a corruption of 'champ,' e.g. Ciamarella is the plain of Marella.

This little volume of 460 pages, which is printed in a convenient shape for carrying in one's pocket, must henceforth be the indispensable 'guide, philosopher, and friend' of anyone proposing to visit the extensive tract of country which it so carefully and accurately describes. The scheme, with the exception noted above, is good, and has been carried out in such a manner as to make the book a model of what an Alpine Guide should be.

Signor Baretta publishes two more works in quarto shape, similar to the one on the Grand Paradis, already noticed in these columns.* They are both mainly devoted to the geology of the several districts, but throw a most welcome light on various intricate topographical problems, especially the former,† which treats of three valleys (Val Grisanche, Val de Rhêmes, and Vallon de la Thuille), which are as yet but very imperfectly known to Alpine travellers. Besides six maps and geological sections, it contains coloured views of the Mont Favre, and of the Lac du Rutor, backed by the two peaks of the Assaly (as to which careful articles by Mons. Puiseux in the new 'C. A. F. Annuaire,' pp. 86-91, and by Signor Marengo in the 'Bollettino,' No. 42, pp. 272-5, should be consulted)—seen from the chapel of Sainte Marguerite, a view the beauties of which have been already celebrated by Mr. W. Mathews. The second of the two works‡ is an admirable specimen of a scientific monograph on a single glacier (which is, as Signor Baretta remarks, a thoroughly typical one), written in clear language and full of interest even for those whose scientific knowledge is of the

* *Alpine Journal*, vol. ix. p. 51.

† *Studi geologici sulle Alpi Graie Settentrionali*. Memoria del Prof. M. Baretta. Roma: Salviucci, 1879. 101 pp. (Extracted from *Memorie della Reale Accademia dei Lincei*.)

‡ *Il Ghiacciaio del Miage* (versante italiano del gruppo del Monte Bianco). Per M. Baretta. Paravia: Turin, 1880. 36 pp. (Extracted from the *Memorie della Reale Accademia delle Scienze di Torino*.)

slightest, but who are attracted to the subject of the book by love for the mountains and all that pertains to them. It is illustrated by a map and by coloured geological sections of the lower portion of the glacier.

Another work by the same author* combines the historical element with the scientific. Writing to suggest some means by which the destructive ravages caused by the overflowing of the Lac du Rutor may be checked, Signor Baretti gives us, documents in hand, a most valuable history of the lake from 1594 to the present day, tabulating the various recorded inundations. After a description of the spot, he passes on to a consideration of the variations in the area of the lake, and concludes by advocating, like 'Simon Tubingher allemand' in 1596, the boring of a tunnel to carry off the surplus water into the channel through which it originally flowed. Plans are annexed of the lake as it was in 1860 and in 1879, and facsimiles of the original designs of Carelli in 1752 for the construction of a dyke. This brochure is one of the most important contributions to Alpine history which have lately appeared.

Signor Vaccarone's article in No. 41 of the *Bollettino del C. A. I.*,† 'Le vie delle Alpi Cozie, Graje, Pennine negli antichi tempi,' is one of the most remarkable recent Alpine publications. We cannot accept his daring identification of the 'Cremonis jugum' of Livy with Mont Blanc, and his enumeration of the legends as to the easy crossing in former times of passes, now accessible only to climbers, makes one see on what very slight evidence, if any at all, such stories rest. The author quotes from MSS. in the State archives at Turin, especially from a narrative of 1691, which describes the Col de la Fenêtre at the head of the Val de Bagnes, and the Théodule, according to the lights of that age, and mentions an early attempt to cross the Col du Géant.

Philibert Amédée Arnod, with 'troi bons chasseurs avec des grappins aux pieds, des hachons, et des crocs de fer à la main, pour se faire pas sur la glace,' tried in vain in 1689 ('il n'y eut jamais moyen de pouvoir monter ny avancer à cause des grandes crevaces et interruptions qui se sont faits depuis bien des années') to discover a passage traditionally said to exist 'à droiture d'Entrèves pardessus les glaciers de Mont Fréty pour descendre à Chamonix en Faucigni.' We hardly see how Arnod's adventure supports the theory of an easy and frequented pass.

We hope to return shortly to this interesting article in some papers on the history of the passes of the Alps,‡ and to speak also of the important monograph of Oehlmann, 'Die Alpenpässe im Mittelalter' (published in the *Jahrbücher für Schweizerische Geschichte*, 1878-1879, of which a copy is deposited in the Club Library.)

* *Il Lago del Rutor*. (Alpi Graje Settentrionali.) Ricerche storico-scientifiche. Per M. Baretti. Candeletti, Turin, 1880. (Reprinted from No. 41 of the *Bollettino del Club Alpino Italiano*.)

† *Bollettino del Club Alpino Italiano*. Numbers 37-40 (1879). 41, 42, 43 (1880). Candeletti: Turin.

‡ References to articles, books, &c., on this subject will be most thankfully received by the Editor.

Among other noteworthy articles which have appeared in our Italian contemporary we may mention an account of the first ascent of the Moncimor, in Val Soana, by the Contessa Carolina Palazzi-Lavaggi (No. 41); Signor Fasce's account of his excursions in the Bergamasque valleys (No. 42); Signor del Caretto's notice of the second ascent of the Péteret (No. 42); a translation of Petrarch's letter, describing his ascent of Mont Ventoux, in Provence, in 1336 (No. 42), and an enthusiastic account of an ascent of Mont Fallère by the veteran Abbé Aimé Gorret (No. 43). In the volume for 1879 of the same periodical, Major Forsyth's account of the Gran Sasso d'Italia, and Signor Modoni's excursion to Montefeltro, open up districts little visited by foreigners. Nor must we forget Signor Baretto's short article on the chain of Mont Blanc, to accompany the large coloured view of that range taken from the south, which appeared apart from, though nominally included in, the Bollettino. The reviews of Alpine books and periodicals are as full, excellent, and accurate as usual.

Of the publications of the various sections of the Italian club we have received the third part of the transactions of the Florentine section,* in which the most interesting article, after that by Mr. D. W. Freshfield on the Apennines, translated from our own pages,† is one on Alpine industries. The Bollettino of the Vicentine section‡ forms quite a respectable volume, and contains some interesting papers on the Sette Comuni and on the neighbouring. The reviews of books relating to the Italian Alps are singularly full.

The Aosta Section publishes the third part of the *Album d'un Alpiniste*,§ which takes us into the Val d'Aosta and tributary valleys to the north and south. The text is not noticeable for anything beyond its mingling of fact and fancy, but several of the large illustrations are well done, lithography having succeeded better than usual, e.g. 'Une laiterie à fromages,' 'Près de Mondange,' 'D'Ollomont au col de Fenêtre (près de la Balma),' 'Le Saut de l'Épouse (sur la route de Bionaz à Prarayé).' Among the numerous small vignettes the portrait of a 'Chien de chasse' sniffing the 'marmite' over the fire, has especially taken our fancy. The plan of these books is good, and we note with pleasure that the series is to take in the Vicentino and Biella.

We learn from the new Annuario of the Trentino Club,|| that the Society now numbers nine honorary and 213 ordinary members; and this increased prosperity is attested by the issue of a volume of over 400 pages, devoted to a comparatively small extent of country in the neighbourhood of the Adige valley. Besides many minor original articles and others translated from various Alpine periodicals (se-

* *Scritti varii di Argomento attenenti all'Alpinismo*. Pubblicati per cura della Sezione Fiorentina del C. A. I. Anno III. Nicolai, Florence, 1880.

† *Alpine Journal*, vol. vii. p. 372.

‡ 5° *Bollettino della Sezione Vicentina del C. A. I.* Paroni, Vicenza, 1880.

§ *Album d'un Alpiniste*. 3^{me} Cahier. Dans la Vallée d'Aoste. Amosso, Biella, 1880.

|| *Sesto Annuario della Società degli Alpinisti Tridentini*, 1879-80. Rovereto, 1880.

veral taken from our own pages), we have an elaborate article of over seventy pages on the botanical excursions in the ranges near Rovereto, made by Pietro Cristofori, between 1817 and 1823. It treats first of the group of the Colsanto and the Posubio, and in a second part of Scanupia, Finonchio, and Monte Maggio. The Society hoped to open in August a club hut at the foot of the Tosa, which will be very useful.

Miscellaneous Works on the Alps.

Monsieur Talbert is the godfather of 'caravanes scolaires' in France, by which the pupils of 'lycées,' etc., undertake pedestrian journeys in the summer after the manner of Topffer and his scholars. To give his protégés some idea of the Alps, he has published a little work entitled '*Les Alpes, Études et souvenirs*' (Hachette, 1880), which is well adapted for all those who wish to have in a popular form a general description of the Alps, glaciers, and railroads, Alpine clubs, fatal accidents, carriage roads over passes, etc. What strikes one most in the work is the unusually full way in which the French Alps are described, the peaks of the Tarentaise and the Dauphiné taking their proper place for the first time in a popular book, side by side with the tourist-ridden chain of Mont Blanc. The higher ranges of the Maritime Alps are far too summarily dismissed. There are a large number of illustrations inserted in the text, some taken from the French translation of Mr. Whymper's book. 'Une alerte' and 'Les écoliers dans les montagnes' represent amusing incidents of Alpine travel (p. 24); but the engravings opposite pp. 116 and 120 pander to a taste for horrors which ought not to be encouraged. The paper cover of the volume is novel but not altogether unpleasing, especially to those for whom the book is specially intended.

Herr L. Ravenstein has published a *Karte der West-Tiroler und Engadiner-Alpen* (Frankfort on the Main, price six shillings, mounted and in case), on a scale of $\frac{1}{750,000}$ on the basis of all the best recent maps, including those published by the German A.C. It takes in all the mountain ranges between Chiavenna and Bozen, and extends as far south as the Presanella. The scale is too small to allow of the insertion of minute details, but the hills and glaciers are clearly and distinctly named, and the lettering and heights are remarkably legible. It gives a view in a handy form of a large tract of country, which perhaps is in danger of being forgotten between the rival attractions of the Engadine and the Dolomites to W. and E. If this venture succeeds, and we hope it will, Herr Ravenstein promises to complete a map of the entire Eastern Alps in eight more sheets of similar size and appearance.

Messrs. Blackie and Son send us a splendidly illustrated work for the drawing-room table, 'Switzerland; its Scenery and People' (2 guineas). The numerous engravings are copied from pictures and sketches made expressly for this work, and are as a rule good, though slightly stiff. Those after Mr. E. T. Compton's drawings are a brilliant exception to this last remark. The text, adapted from the German of Gsellfels, does not always run very smoothly, but contains many good historical notices, which, it is to be hoped, will be more studied than such things usually are. We are glad to see that the story of William Tell is distinctly

treated as a legend, though in a hesitating half-hearted sort of way. With regard to those parts of the book which fall more strictly within our province, we notice that the doings of English climbers appear to be never mentioned, save in the case of an adventure on the Piz Bernina; and notably that the Messrs. Smyth's ascent of Monte Rosa in July 1855 is omitted, the honours of the first ascent being given to Herr Weilenmann, who went up a fortnight later. But completeness in such details scarcely enters into the plan of the work, which is one of the most magnificently got-up works of its kind which we have recently seen.

THE ZERMATT POCKET-BOOK.—Now that the Zermatt has been so thoroughly explored that no less than eleven distinct glacier passes have been made between the Rimpfischhorn and Monte Rosa, while there are seven routes up the Gabelhorn, five up the Matterhorn, four up the Nord End, and five up the Höchste Spitze of Monte Rosa, for the bewildered mountaineer to choose from, it was but fitting that some such publication in a cheap, concise, portable form should appear in our language for the benefit of the numerous English climbers who visit this district. Mountaineering has made such rapid strides since the publication of Ball's admirable 'Alpine Guide' that the information in that book has fallen rather behind the times. We therefore cordially welcome the appearance of the 'Zermatt Pocket-Book,' compiled by W. M. Conway (London: Edward Stanford, 1881), in which the conditions of cheapness, conciseness, and portability are thoroughly fulfilled. It is clearly printed, and the binding looks as if it would stand the rather severe test of mountain use. The new expeditions published from year to year in the 'Alpine Journal' and elsewhere have been carefully sifted and condensed, and short, plain directions are given regarding every peak and pass of importance in the Fletschhorn Group, the Saas Grat, the Monte Rosa Group, the peaks and passes of the Valpelline and Val Tournanche, the Zinal Grat, the Z'mutt Grat, the Bertol and Colon Groups, and the Ferpèche Group. Mr. C. Taylor's name has accidentally slipped out, on p. 52, in the notice of the ascent of Monte Rosa from Macugnaga, though it appears all right on p. 48. On p. 136 there is a useful table of heights, and on pp. 5 and 6 there is a list of the various inns in the district, in which we notice the curious omission of the inn at Mattmark in the Saas Thal. We heartily concur with Mr. Conway in his appreciation of the good management of the inns under the control of M. Seiler. A few sheets of blank paper bound in with the letterpress would have been convenient to the traveller, but we almost fear that if he were to load himself with all the impedimenta recommended in the packing and climbing lists, he would require an army of porters. These lists are so exhaustive as to include pipe-cleaners and cigarette-papers, but we are at a loss to understand why an extra rope should be required 'if the traveller proposes to camp out,' and, so far as our experience goes, a guide's axe has usually been found to answer all the purposes of a hatchet. However, these remarks are almost hypercritical and show how very little we have to suggest in the way of

improvements. We venture to predict that 'The Zermatt Pocket-Book' will prove a great convenience to all classes of mountaineers, and, we hope, the *avant-coursur* of a series of pocket-books for the use of mountaineers in all parts of the Alps.—F. G.

ALPINE NOTES.

THE FATAL ACCIDENT IN THE ZILLERTHALER FERNER.—We have delayed giving any details as to the circumstances under which Herr Welter met with his death, by falling into a crevasse on the Neveser Ferner, on July 25 last, because the story, as first reported, was so shocking that it seemed preferable to wait for a fully authenticated account. The German Club, to which the travellers belonged, has now published an official report, which they request may be made public. We deeply regret to say that in the main it only confirms the first news. A party consisting of two travellers, Herr Welter and Herr Seligmann, of Cologne, two guides, Johann Niederwieser *vulgo* Stabeler, of Sand, and Johann Knaus *vulgo* Mauthner, of Ramsau, and a porter, Franz Hofer, of Krimml, were descending from the Mösele. At about *midday* they found themselves—near a spot known as the *Grosser Trog*—on the glacier, which was here covered by a crust, formed during the preceding winter, of icy snow, which had so much the appearance of genuine ice that it is suggested that they believed the crevasses to be uncovered. Here Herr Welter complained of the rope hampering him. It was taken off by Stabeler, with the consent of the other guide and porter. Stabeler, however, warned his companions to follow precisely in his footsteps, thus showing that he was aware that there was danger from crevasses.

Before long Herr Welter disappeared into a chasm. Stabeler was at once let down with a cord, which belonged to him. After a time he found the traveller alive, but much covered with snow and jammed in the crevasse. He freed Herr Welter's head, arms, and one foot, tied the rope to him, and called to his comrades to haul. They did, but with no result. He then shouted to them to let down a much stronger Manilla cord, which they had with them. His request was not understood. Leaving in the crevasse Herr Welter, who was perfectly conscious and collected, he was himself drawn up by the weaker cord by which he had been let down. As he neared the surface the wretched cord broke, and Stabeler fell back into the crevasse at Herr Welter's feet. He was not too seriously hurt, however, to be unable, on the rope being joined and let down, to tie himself to it again. He was thus brought up safely.

Now follows the most lamentable part of the story. The shock of his fall had been too much for Stabeler's moral courage. He broke down utterly, and, according to the somewhat obscure account (of which the German Club have, we are informed, been unable to obtain any further elucidation), seems to have been first hysterical and incoherent, and then, without explanation, to have started off in search of help to Weissenbach, spending some time in fainting on the way.

Meantime the porter went, on his own account, to the chalet of Lappach, whence he brought back, in the course of the afternoon (before four o'clock) a shepherd and three boys. The shepherd was tied to a rope and let down. He found Herr Welter already dead. At 4 P.M. the whole party, all hope being over, left the scene of the disaster.

Next morning a large company returned to the spot. Herr Welter's corpse was fastened to the rope, but even the exertions of twenty men were at first insufficient to raise it. A man of the neighbourhood having descended with an ice-axe and freed the body, it was lifted out without further difficulty and taken down to the valley, where, at the instance of the Section Taufers (of the D. and Ö. A. V.), a judicial inquiry was held as to the circumstances of the traveller's death.

On the facts thus established a competent and impartial tribunal can express but one opinion. Another has been added to the long list of avoidable disasters. Herr Welter's death was caused, in the first instance, by the neglect of the common and well-known precautions which render mountaineering possible for reasonable men. The party took off the rope on a crevassed glacier; they carried with them a bad rope. Having thus begun by breaking two elementary rules, the guides, when occasion arose, perversely used the bad in place of the good rope. Then followed a series of miserable blunders, which it is harrowing to have to tell once, and over which we will not go again. There seems, as the facts are stated, to have been no reason why a strong man, with a head as well as arms, should not have released the unfortunate traveller at once, as well as on the next day. As it was, not only were the presence of mind and moral courage, which distinguish the true glacier guide in emergencies, conspicuously absent, but in their place there was a display of the most opposite qualities, such as we are glad to think was without precedent, and we trust may long remain without parallel, in Alpine story.

To exonerate those concerned on this occasion would be to invite, and take a large responsibility for, similar disasters in the future. On the other hand, we are at all times unwilling to weigh harshly on individual guides. Too much may easily be expected from peasants; and it is fair to remember that Tyrolese peasants have less natural aptitude and training for ice work than Swiss or Savoyards. But with guides, as with soldiers, it is essential, in the interest of the profession, that a simple standard of duty and intelligence should be upheld; that an elementary knowledge of the rules of their craft should be insisted on.

This lamentable lesson will, we expect, lead the German and Austrian clubs to take some practical steps for better instructing Tyrolese guides in ice-craft. Many fine cragmen among them are either reckless or helpless on ice, and though the total of Tyrolese accidents is small, most of them have occurred from carelessness or ignorance on glaciers. To our own members we may repeat a warning, grounded on two fatal accidents in Tyrol, originally given in this Journal fifteen years ago. 'English mountaineers intending to visit little known regions must take their own ropes, and must trust to their own judgment in enforcing the use of the rope where they deem it necessary or advisable.' (Vol. ii. p. 224.)

Since, out of respect to individual feelings, what we hold a mistaken reserve is sometimes maintained abroad, it is, perhaps, expedient in the interest of climbers of all nations to state once more the rule, which has been so often and so sadly illustrated in its breaches, that the proper use of the rope is the beginning of all mountaineering. There are two degrees of recklessness possible in its neglect. The first degree is when a good climber throws it off on rocks where he trusts with more or less reason to his own skill to avoid a fall. Thus perished Dr. Moseley and Mr. Elliott. There is a second and far worse degree (which, in confessing to having in his young days been himself guilty of it, a late President of the Alpine Club has qualified as 'scandalous recklessness'), when a party throw off the rope on a snow-covered glacier, where no experience is of avail against an invisible danger. That there are few of us whose memories can acquit them of having at some time or other acquiesced in such an act of suicidal folly is only another reason for plain speaking.

PRESENA PASS.—This route, from Ponte di Legno into the Val di Genova, though used by early explorers* (and marked in the new Austrian map), is little known and not mentioned in guide-books. It altogether avoids Val di Narcane, the ascent lying through Val Presena, the highest glen of Val di Sole. Messrs. W. W. Ford and H. Rae, with a guide from Santa Catarina, left Ponte di Legno on August 24 at 3.50 A.M., reached the cantoniera at the top of the Tonale Pass in 1½ hrs. and the top of the Presena Pass, overlooking the 'Lago scuro,' in 5½ hrs., including halts amounting to 30 min. (height 9,770 feet). From the Tonale the direction is easterly, and a path leads up what appears to be a land-slip to a granite wall in a well-marked depression. The wall is climbed from right to left by a ledge with a water-fall on the right hand. One keeps well to the right after this between the Presena lakes and over a curious ridge piled up with jagged boulders, to the foot of a glacier; and then nearly south for 1 hr. over *névé* to the narrow col, which is marked by a gigantic stone man.

The descent to the lake is exceedingly steep, over very loose and thick rubbish and patches of snow. It can be made in about 20 min. The way then runs eastwards and is easy.

The weather was thick and very wet. The party turned off and went for shelter to the Mandron hut, erected by the Leipsic section of the German Alpine Club, and reached it at 10.40 A.M. in a bad plight. The ground floor was closed: the roof of the upper room is like a cavern and it leaked in every part, but matters are to be improved before the season of 1881 commences.

The mist partially cleared, and they were fortunate during an hour's rest in seeing several avalanches of ice discharged from the extremity of the Mandron glacier, showing the process of its decay. In 1½ hrs. they reached the better quarters at Bedole, and Pinzolo at 6.15 P.M.

They found the Corona inn, kept by Collini in that village, beautifully clean, the fare good, the rooms comfortable, large, and well

* It was crossed by Herr Lorentz and reached in 1864 by Herr Payer (*Mittheilungen des D. u. O. A. V.*, 1879, p. 94.)

furnished, and the attention and hospitality of the host remarkable even in Tyrol.

THE CINQUE TORRI.—Mr. C. G. Wall sends the following account of his ascent of the Cinque Torri or Torri di Averau ('A. J.' x. 107), an extraordinary assemblage of towers of rock in the neighbourhood of Cortina, in the Ampezzo valley, South Tyrol:—'Seen from Cortina, it will probably be some time before the traveller discovers that they are isolated rocks, as they appear to form part of a range about half a mile beyond them, called the Nuvolau; looking in fact as if they were one block with the precipices of that mountain. Their form is most curious, and one would have to travel far to come across anything to be compared to them. The height of the loftiest of these towers, as far as the guide and myself could judge without a barometer, is between 1,000 and 1,200 feet from the base, that is about 7,700 or 8,000 feet above the level of the sea. From whatever side it be seen, except from the west, it appears as a huge square tower, bulging slightly in the middle, and sometimes overhanging its base.

'On the west side there is a very slight inclination from the perpendicular; and from east and west is seen a huge crack, cutting the rock right in two, which is filled on the west with enormous boulders fallen from above.

'During a stay of nine weeks at Cortina, my brother and myself had ascended most of the Ampezzo Dolomites, with Giuseppe Ghedina di Angelo as guide (the same who was with Miss Edwards during her trip through the Dolomites), and having acquired a great liking for this kind of amusement, I inquired of the landlord of the Aquila Nera whether he thought it possible to get up the Cinque Torri; he laughed at the idea, and on my asking him why he thought it was inaccessible he said that no man had ever seen a chamois up there, and that where a chamois could not go I might be certain a man could find no footing. "But a chamois can't go up a tree or even a chimney," said I, and he was floored, a roar of laughter going round the room, but still he and his brothers persisted in saying it was impossible. I thought no more of the matter, but happening during our last week's stay to ascend the *Alto Nuvolau*, I came for the first time to the west side, and looking at the Torre attentively, I saw a huge *Kamin*, with enormous blocks of stone sticking in it, which stretched out of sight into the centre of the tower, where it took a sudden turning. I tried the first few steps myself, but could only get about ten feet up the face of almost perpendicular rock; however, it seemed to me that a first-rate climber might find foothold, so on the way back from the Nuvolau, I asked Giuseppe to take a look at it and tell me his opinion. He was quite astonished at the apparent ease of it, and said he thought he could do it. We were all in the *Gaststube* the same evening, and I asked Giuseppe whether he would try the ascent on the morrow with me, to which he consented. On going out I heard them laughing at the idea of our trying it, for, as Giuseppe afterwards told me, it came out in the ensuing conversation that some of the best guides there had tried it without success, not getting up the very first bit, which, as I found afterwards, got harder and harder every foot of the way. However, we were off at 5.30 next

morning (September 17, 1880), Giuseppe with his ice-axe, a rope eighty feet long, and *Rucksack* with the provisions. Two hours' good sharp walking brought us to the foot of the rock, where the first thing Giuseppe did was to knock off a lath from the roof of a hut to make a cross at the top (if we got there!) Then we began the ascent, leaving everything behind except the rope. Giuseppe in some extraordinary way climbed up the first part of the *Kamin*, a nearly perpendicular face of rock forty feet high. Having got a good standing ground, he let down the rope and pulled up the pole and the other things, and then hauled me up. I could find no foot or hand hold at all, and do not in the least know how he managed it. Then we crept for about twenty feet straight up through a narrow dark hole into a sort of cauldron of rocks, open to the sky, and with no apparent outlet; what was to be done now, on one side an overhanging rock going right up to the top, on the other the chimney blocked up by an enormous boulder fallen from above? Now if this rock had fallen with its top where its base was, it would have been easy, for there were ledges all along it; but having fallen upside down, the ledges were the wrong side up, i.e., to walk on one of them it would be necessary to walk head downwards, a difficult process. The rock was at least twenty feet in height and very nearly perpendicular, besides overhanging from four feet from the bottom; however, it must not be given up without a trial, so, sticking the pole against it, I held it fast while Giuseppe just got over the overhanging piece, and then with nails and fingers like iron got up some of the worst part. "Now," said he, "I can't come back, so I must go on," and in the same extraordinary way as before he surmounted the obstacle. Then with some difficulty I threw the rope up to him, and having again sent up the pole, &c., I tied myself on. Having been hauled up the first piece like a sack of corn, I asked him to let me try if I could do the rest myself, so he loosened the strain, upon which I got up one foot and then had to let him haul me up by main strength the rest of the way. Here we were then in a sort of little grotto, shut in on all sides, except that from which we had come up, by overhanging cliffs, the only way out being to go along a little ledge about eighteen inches wide, slanting horribly, and slippery with water, the rock overhanging, if possible, more than that bit on the Pelmo Mr. Ball calls "an eccentric obstacle." The only way to get along this was to lie down with half the body on the ridge and half supported by the feet pressed against the opposite cliff, and in this position to wriggle along; a horrible operation for the guide and bad enough for me, although I had the rope, for, although I could not have fallen to the bottom, still, the ledge being about seven or eight feet long, a slip would have sent me like a pendulum along the precipice. The most difficult part of all had been overcome; henceforward we had to jump and scramble from rock to rock, between each rock a chasm, to the foot of the tower, and to go up little tunnels. Soon we came to a place where Giuseppe had to decide which of the two sides of the main chimney should be ascended. He chose that to the right, as seen from Cortina, the other being absolutely impracticable without the help of a ladder. From now on, we continued with comparative ease by some stiff scrambling

to the top (three hours from the foot), where we found to our huge delight that it was the highest point of the tower we had reached, and where we were observed with great attention and astonishment by two parties, one ascending, the other descending, the Nuvolau, and from Cortina. Making a huge pyramid and sticking our pole up in it, we cut off a piece and nailed it on so as to form a cross. After lunch we began the usual amusement of throwing down stones till Giuseppe suddenly stopped me in a great hurry, reminding me that if one of these stones should block up any of our little tunnels we should be in a nice fix. The way down was interesting. The process consisted in Giuseppe letting me down forty, sixty, or eighty feet, then doubling the rope which I cast off, putting it over a projection, and lowering himself down thirty or forty feet to a place where he could find another projection, and repeating the process. After two hours and forty minutes we arrived at the foot, where we rested. Giuseppe was in a great state of delight, and said to me, "Per Dio, in not one of the mountains here is the most difficult bit as hard as the easiest in this;" with which opinion, as far as my experience goes, I quite agree. Then we came quickly down to Cortina, where we were received with congratulations from every side. The fact that the best guides in Cortina had failed here, and that these are men who have effected the first ascents of the Pala di S. Martino and other peaks in the Cortina and Primiero districts, speaks for itself in favour of the powers of Giuseppe Ghedina; and yet his name is not mentioned in any of the guide-books to this district, although he has been a registered guide since 1874. The next evening, as he was sitting at a table in the *Wirthstube*, in came a procession of guides headed by Santo Siropaes, who read him an address congratulating him on conquering "the last unascended peak in the Ampezzaner Dolomites."

ALPINE MEETING IN WALES.—There will be a meeting of members of the Alpine Club on Saturday, April 28, at the Golden Lion Hotel, Dolgelley. Dinner, including wine, will be one guinea. Morning dress. Members wishing to attend are requested to send their names, and the names of any friends they may wish to bring, to Mr. E. Hulton, Union Club, Manchester.

Some members of the party will meet, on the evening of Friday the 22nd, at the White Lion Hotel, Bala, and intend walking to Dolgelley the next day over Aran Mawddwy.

PROCEEDINGS OF THE ALPINE CLUB.

A General Meeting of the Club took place on December 15 last, Mr. C. E. MATHEWS, *President, in the Chair*.

The following gentlemen were elected members of the Club:—Messrs. A. ELMSLIE, W. A. GREENE, G. GRUBER, RAWDON LEVETT, C. A. MOREING, JOHN TAYLOR, and T. W. WALL.

The President—his term of office having expired, and not being eligible, according to the Rules, for re-election—then proposed that the Rev. T. G. BONNEY should be elected President for the ensuing year. Mr. Bonney, he believed, would be generally acceptable to the Club,

as combining many qualifications for the post. He had been one of its early members, and was distinguished as a climber and as a man of science, as an author and as an artist. He had written one of the best general books on the Alps, had published a volume on the High Alps of Dauphiné, beautifully illustrated by his own hand, after four journeys of exploration in the district; and had contributed many papers to the journal of the Geological Society, of which, he believed, he was likely in a short time to become President. We were further indebted to him for his share in the numerous illustrated works on the Alps, produced by our late lamented member, Mr. ELIJAH WALTON. The motion was duly seconded and carried *nem. con.*

Mr. A. W. MOORE proposed, as Vice-Presidents for the year, Messrs. CRAWFORD GROVE and HORACE WALKER. Mr. GROVE was an enthusiastic mountaineer, whose feats in the Alps were well known. He was a Caucasian explorer (as was also Mr. WALKER), and was the author of an excellent volume on 'The Frosty Caucasus.' Mr. H. WALKER was also well known as a mountaineer, and one of the warmest supporters of the Club among its country members in the North. The motion having been duly seconded was carried *nem. con.*

Mr. D. W. FRESHFIELD proposed that, in place of Messrs. STILL, COOLIDGE, and DAVIDSON, who retired by rotation, Messrs. J. ECCLES, M. HOLZMANN, and F. POLLOCK should be appointed members of the Committee. In selecting members of the Committee it was necessary, the first object being to secure the services of members of the Club who could conveniently attend Committee meetings, to give what might seem an undue predominance to town members. The names placed before the Club were selected for special qualifications. Mr. POLLOCK hoped to be able to look after the Club Library. The motion was duly seconded and was carried *nem. con.*

The other members of the Committee, being eligible, were unanimously re-elected.

Mr. W. E. DAVIDSON, proposed by Mr. George, was unanimously elected Hon. Secretary to the Club, in place of Mr. C. T. Dent, whose term of office had expired, and who was not re-eligible.

The President (Mr. C. E. MATHEWS) then read a paper on 'The Growth of Mountaineering,' at the conclusion of which a vote of thanks was proposed by the Rev. H. B. GEORGE, and seconded by Mr. A. W. MOORE, both of whom made a few remarks on the subject of the paper. The vote having been carried unanimously, the President briefly acknowledged the compliment, and was received with great enthusiasm by the large number of members present on his last appearance in the Chair.

On December 16 an Exhibition of Alpine Works of Art, and the annual Winter Dinner were held at Willis's Rooms. The Exhibition, open during the afternoon as well as in the evening, was largely attended by members and their friends. Mr. G. BARNARD, Mr. E. T. COMPTON, Mr. A. CROFT, and Mr. SMITH were among the largest exhibitors. Mr. MACALLUM showed some fine oil paintings of the Gorner glacier, Val d'Aosta, and Val Anzasca; Mr. A. WILLIAMS large and bold water-colour drawings of Monte Rosa from the Monte Moro, of the Saasgrat

from the Augstbord pass, and of the Cimon della Pala. Amongst the other chief exhibitors were Miss ALICE DONKIN and the Baroness HELGA VON CREAM. Mr. W. F. DONKIN exhibited a number of large photographs, taken by himself, among which a complete panorama from the summit of the Dom was specially remarkable, and excited general admiration as the finest work above the snow-line yet produced by any photographer. Mr. E. WHYMPER showed part of the collection of antiquities made by him during his recent journey in South America.

By the liberality of the President (Mr. C. E. MATHEWS) and the Hon. Secretary (Mr. C. T. DENT) the band of the Coldstream Guards played during the afternoon a selection of music, which was highly approved.

The Annual Dinner took place in the evening, about 160 members and their friends being present. Among the guests were Professor H. J. S. Smith, F.R.S., Mr. Etheridge, F.R.S. (President of the Geological Society), Mr. Judd, F.R.S., Mr. Marcet, and Mr. J. E. Gorst, M.P.

CATALOGUE OF THE CLUB LIBRARY.—Mr. C. C. Tucker, the Hon. Librarian, has had the Catalogue of the Club Library printed (36 pages), and it may be obtained for a shilling on application to the Assistant Secretary. It will, we hope, not only show members how large the Library actually is, but will stimulate them to fill up, by timely gifts, the few gaps which are visible in it.

Errata in last Number.

- Page 54, line 18, *dele* '(21,424 feet).'
 " 83, " 17, *for* 'lower table' *read* 'lower tooth.'
 " 95, " 17, " '3.40' *read* '8.40.'
 " 108, " 15, " 'Leugen' *read* 'Lengen.'
 " 112, last line but two, *for* '3' *read* '2.'

THE ALPINE JOURNAL.

MAY 1881.

EXPEDITIONS AMONG THE GREAT ANDES OF ECUADOR. III.

Feb. 23, 1880. *The First Ascent of Sincholagua.*—This mountain is situated somewhat south of east of the hamlet of Pedregal, and appears to be but a short distance from that place. As usual, we were greatly deceived in this matter, and found the ascent was a good day's work.

Left Pedregal with the two Carrels and two natives at 7 A.M., having been delayed until that time through our mules straying in the night. Rode rapidly for about three miles over the route taken in going to and returning from Cotopaxi, and then bore away to the east, directly towards Sincholagua. Crossed the Rio Pita at 8.13 A.M., and then commenced to ascend the lower slopes of our mountain. Got inadvertently into some boggy ground, and out of it with difficulty. Louis Carrel's mule would have been swallowed up had it not been hauled out by the united force of the whole party. Beasts could go no farther at 10.30 A.M., and were left at a height of about 14,300 feet in charge of the natives. The ascent was continued by the rocks and snowbeds which skirt the northern side of the principal glacier which descends on the western side of Sincholagua, until we had nearly reached the head of the glacier. The glacier was then crossed obliquely and the ascent was completed by the summit arête of the mountain, which runs nearly north and south.

At 12.30 P.M. encountered a very hard storm of snow and hail, and returned a short distance to shelter under some steep cliffs. Hail fell with such violence as to knock off fragments from the rocks above us. Before this ceased, a thunderstorm set in, and

we were detained prisoners for an hour. Time then running short we reluctantly bore for the summit, leaving all baggage below in order to move rapidly. The last three hundred feet proved tough, and passed along a thin arête of hard snow and ice which ultimately became extremely steep, and terminated in a small tooth of rock which was too small to allow all three to stand upon it at once. In descending, none of the party ventured upon coming down face outwards. The thunderstorm continued to rage immediately round the final peak; our axes hissed; and explosions occurred all around every few seconds. The position being extremely perilous, only sufficient stay was made to secure fragments from the summit, and nothing was done with any of the instruments. The height of this mountain consequently was not determined.*

Left the summit at 2.30 P.M., and, descending very rapidly, arrived at the mules by 3.30 P.M. Started downwards with them at 4.15; and, by forcing the pace as hard as possible, arrived at Pedregal at 6.50 P.M.† Encamped again in the chapel.

Feb. 24. Pedregal to Machachi, encountering another severe thunderstorm on our way back. The country between these two places is one of the best districts in the interior for butterflies. Species as well as individuals are numerous.

Feb. 24-29. At Machachi packing for a move to Quito. Altogether we were at Machachi or in its neighbourhood for a month. The first impressions of the place were exceedingly unpleasant. It seemed barren and uninteresting, and its inhabitants uncouth and churlish. We came ultimately to like both it and many of the people. Close investigation shewed that there were numerous charming walks in the nearly concealed earthquake-ravines, and that the

* This was the only mountain ascended during the journey in which this was the case. According to Messrs. Reiss and Stübel its height is 16,365 feet, and these gentlemen appear to have been the only persons who have measured it.

† The hamlet of Pedregal consists of a rather large farm, and a cluster of poor native houses. Its height is 11,600 feet. The time occupied on the ascent and descent (excluding halts) was 9 h. 25 min., and consequently the mean of the ascending and descending rates was almost precisely 1000 feet per hour. The reader is requested to compare this with the statements of Messrs. Remy and Brencley quoted in the present number of the 'Alpine Journal.'

district was rich in insects. Of large wild beasts the principal was the Puma, and skins of it were frequently brought for sale. Deer, foxes, and opossums were not scarce. Butterflies and brilliant dragon-flies were in abundance, and lizards and scorpions not rare. Mosquitoes were almost and snakes were entirely unknown.

Mar. 1. *From Machachi to Quito* (9353 feet),* with twelve mules. Arrived at 6 P.M., having lost much time *en route* by stoppages to avoid tremendous rain. Went to the only hotel in the place, kept by a Corsican. Received visit from H.B.M.'s minister, Mr. Douglas, soon after arrival, and the first letters which had come to hand since departure from England.

„ 2-3. *At Quito.*—The city had been recently white-washed by order of the President and looked bright and clean. Paid visits to and received visits from most of the principal foreigners in the place, including the French Sec. of Legation, German consul, and the Chilean minister. Had long interview with H.E. the President of the Republic, who promised to do everything I might desire. Discharged Per-ring, and engaged in his place an unemployed English mechanic, named Verity. Got possession of the stores which had been sent out direct from England, and on examination found that almost all the tins of ox-cheek contained in the cases had putrefied and burst. Cleansing the rest of the tins gave weeks of labour, and we never got free from the stench of the ox-cheek.

„ 4. *From Quito to the Hacienda Colegio.*—Left at 11.30 A.M. with a large caravan on the way to Antisana. Crossed the intervening (Puengasi) ridge into the Chillo basin, and forded the Rio Pita (here a large stream, running about nine miles an hour) at 3.30 P.M. Shortly afterwards very heavy rain set in, and we stopped for shelter at the farm called Colegio. Scarcely anything to eat could be obtained here, and on this journey as well as on every other occasion we carried all necessary provisions with us, seldom finding it possible to purchase food, even when there was plenty round about us.

* The mean of a large number of observations. According to Reiss and Stübel the height is 9350 feet.

Mar. 5. From Hacienda Colegio to Hacienda Antisanilla, via Pintac and Piñantura.—Started at 4.45 A.M., taking a man from the farm as guide until day broke. Arrived at the village of Pintac at 8.45 A.M., having passed over some of the worst road that we saw anywhere in Ecuador. The mud was frequently two to three feet deep. Left at 9.45 and arrived at the Hacienda of Piñantura at 12.10, the road at this part being somewhat better and very picturesque,—leading through semi-tropical scenery. Continued after a few minutes' halt, and again had tremendously heavy rain that made the road (which at this part is always very bad) nearly impassable. One mud hole which had to be passed was fully four feet deep. Beasts which stuck fast or rolled over had frequently to be unloaded and repacked. Crossed the stream called Isco at 4 P.M., and about half an hour later rode up to the Hacienda of Antisanilla (12,340), amid the customary howlings of innumerable curs.

- „ 6. *From the Hacienda of Antisanilla to the Hacienda of Antisana.*—These two farms are large cattle stations, having a considerable number of servants attached to them, but the periodical counting had been just terminated at the upper one and we found it temporarily deserted. It is reputed to be the highest farm in Ecuador, and according to our observations is 13,300 feet above the sea. It is situated on the western slopes of Antisana, in a cheerless situation, without a tree in sight, and is enveloped in fog the greater part of the year. The lower slopes of Antisana are of immense length and very devoid of character on this side.

Antisana became clear for a short time in the afternoon, and a route was traced up it. Sent out all the people collecting and got in a fair number of butterflies, moths and beetles, but did better in the evening through moths being attracted by the lantern as we sat in the gallery on the upper story of the hacienda.

- „ 7. *First attempt to ascend Antisana.*—Started from the farm at 4.35 A.M., rode up to the foot of the nearest glacier (15,295 feet) and sent back the beasts at 6.40. Ascended by the moraine on the north side of the glacier until we took to the ice (15,980) at 7.30 A.M. Up to this point our baggage was carried

by Verity and the natives, who were then sent back to the *hacienda*.

The western side of Antisana is almost entirely covered by glacier, and we roped up and continued tied all the rest of the day. Very little of the ice is free from snow, and it was highly crevassed; but, as the fissures were small at the beginning, we were able to steer a course directly towards the highest point until about 8.30. The glacier then steepened and we zigzagged about, stopping at 9.10 for a few minutes to eat. Until this time the upper part of the mountain was free from cloud, and we strictly followed out the route which had been selected; finding, however, as we mounted, that the upper part of the mountain separated itself into a double line of summits, and was not the compact mass which it appears to be when viewed from the west.

The seracs then became very large (they were nearly invisible from below) and a good deal of cutting had to be done, as well as much beating down to consolidate the snow-bridges. Some of the bridge-passages were most complicated. We were no sooner off one than we were on to another, and had to make very extensive circuits to avoid the largest crevasses. At 10.30 A.M. the mists (which had long since been gathering below) caught us up, and at 10.55 we arrived at a prodigious schrund, and wholly failed to find a way across it. We promenaded a large serac from one end to the other without discovering a means of escape. When the mists opened a little, an immense wall of ice appeared on the other side of a crevasse hundreds of feet deep and some sixty feet wide. At length we found a bridge; but, as it terminated on the upper side against a sheer cliff of ice, it was useless, and we eventually found that we had run into a *cul-de-sac* and had to retreat down the route we had ascended. The point at which we turned was about 18,600 feet above the level of the sea.

This was not found out until long past mid-day. At 1.20 P.M. we turned to descend and in three quarters of an hour emerged from the clouds,—a little later discovering that we had borne too much to the right (*i.e.* to the south), and had latterly been going away from the highest point. Got off the glacier at

3 P.M.; met our beasts coming to fetch us at 4.45, and arrived at the *hacienda* at 5.55 P.M.

Mar. 8. At the Hacienda of Antisana.—In bed until 3 P.M. Writhing in agony all through the previous night with snow-blindness. Verity sat up bathing eyes with cold water and sulphate of zinc, and by the afternoon of the 8th there was a little improvement. Sent a lad down to the village of Chillo to get bread, &c., and all the rest out collecting.

„ 9. *From Hacienda of Antisana to Camp on Antisana.*—Eyes were a good deal better in the morning, but they were obliged to be bandaged up, and the right one remained painful for seven or eight weeks. Decided to camp at the foot of the glaciers, as the ascent seemed too much to make in one day from the *hacienda*. At 12.55 P.M. started; got the caravan again up to the foot of the moraine at 2.40; and all our baggage up to the camping-place (15,980) by 4 P.M. Our natives assisted us to camp and then returned to the *hacienda*. We occupied a very exposed position, as there were no rocks large enough to give protection. The tent was placed, however, at a good point for starting, just at the very edge of the glacier. Had a fierce hail-storm whilst coming up, and snow fell heavily as we encamped and for several hours afterwards.

„ 10. *The First Ascent of Antisana.*—Contrary to expectation, temperature did not descend so low as freezing-point during the night. The weather seemed very doubtful, and we delayed starting until daybreak, to see how it would develop. It was far from being what we desired; but, as it did not seem altogether bad, we got away at 5.38 A.M., and derived considerable benefit from the track made on the 7th, although several inches of snow had fallen on the night of 9–10. At 7.30 A.M. clouds formed around the highest summit, and we did not see it again until the afternoon. At about 8 A.M., when we were 800 to 1000 feet below the highest point, we got into a labyrinth of crevasses, and had the greatest difficulty in forcing our way through them. Rather more than an hour later, as the snow commenced to fall away in front of us, we imagined that we had reached the ridge leading from the highest point to the second summit (and ultimately saw that such was

the case) and bore away to the left, and circled round and round until we found the snow falling away in all directions, never being able to see as much as 50 yards away. At length, finding that the snow sloped away in all directions, we concluded that we were on the highest point. This was exactly at 10 A.M. At 10.20 A.M. the mercurial barometer read 15,164 inches, with an air temp. of 53°.5, and at 11.20 15,192 inches, with an air temp. of 56°. The mean of these when worked out in comparison with nearly simultaneous readings at Guayaquil gives 19,335 feet as the height of Antisana.*

We remained on the summit an hour and forty minutes, and during all this time the air was remarkably still. The fluctuations in the air temperature were extraordinary, ranging from 44° to 60°. The maximum observed temperature at the Hacienda of Antisana during the whole of our stay there was only 49° Fah., and so the maximum observed on the summit was 11° higher than that of the *hacienda*, although the latter station was 6000 feet below the upper one! †

Left the summit at 11.40 A.M. and after we had descended a short distance the clouds cleared sufficiently for us to be certain that we had been on the highest point. Descended quickly and arrived at the tent at 2.20 P.M. Verity, with natives and horses, were in waiting, and all returned together to the *hacienda* at 6.40 P.M.

Mar. 11. From the Hacienda of Antisana to that of Antisanilla.

—Sent down an Indian in advance to order a dead horse for condor catching, and followed with all our caravan as soon as very heavy rain would permit. Part of the road was frightfully slippery, and several of our beasts rolled over. Arrived at Antisanilla in three hours from the higher farm. Most wretched weather all day. Clouds low down, and rain and sleet prevented all work out of doors.

„ 12. *From the Hacienda of Antisanilla to that of Piñantura.*—In the morning there was again abominable weather. Started off the Carrels with the baggage and natives, and went with Verity and some Indians

* This is 450 feet more than the height assigned by Reiss and Stübel.

† Four thermometers were used on this occasion for air temperature, three of which were quick-acting mercurials.

to a neighbouring valley to see wild cattle lassoed, and to attempt to lasso condors. The latter piece of sport turned out a failure, as they had only spread out the dead horse for the condors' banquet this morning, instead of overnight, according to the directions. Eighteen condors had assembled to the feast, but they had not sufficiently gorged themselves, and soared away before we could approach near enough.

Followed the baggage to Piñantura, and arrived there completely drenched by heavy rain, so stopped at the *hacienda* for the night.

Mar. 13. From Piñantura to Quito.—Started with all the train at an early hour and kept company as far as the ford over the Rio Pita, where we separated; Verity and I going to the village of Chillo on a visit to the cotton factory belonging to the Aguirres, and the rest proceeding direct to Quito. We others arrived at Quito at 11 P.M. with our animals dead beat.

„ 14-20. *At Quito.*—Sorting and arranging provisions, &c., cleaning up, and endeavouring to get rid of the stench of Turner's ox-cheek, &c. &c. Wrote thirty letters to Europe, and despatched them through Mr. Douglas.

„ 21. *From Quito to First Camp on Pichincha.*—This mountain lies a little to the north of west from Quito, and the city is built on a portion of its lower slopes. It is reputed to be an active volcano, but its activity at the present time is of a rather languid description as compared with Cotopaxi. Its craters have been frequently visited, and there is no difficulty in riding on mule-back up to their lips. As the roads (or tracks) are in places, as usual, bad, it is much more pleasant, and quicker, to go on foot; but no person, except one totally unaccustomed to mountains, would think of speaking of this excursion as one presenting any difficulty, and the extravagant language which has been used by former travellers about it deserves ridicule if not condemnation.

We were unable to learn that anyone had ascended the highest point of this mountain, called Guagua Pichincha, and the objects of the present journey were to combine the ascent of this peak with a visit to the craters. The weather proved even more unkind than usual; and, though we ascended the highest

and the middle peaks of the mountain, we were unable to see more than a fragment of the craters, through their being hopelessly shrouded in clouds.

Took the route usually followed for this excursion, passed behind the hill Panecillo, and through the village of Magdalena, and then commenced to ascend the slopes of Pichincha (leaving the village of Chillo-gallo on our left), going at first over a sort of small col and descending on the village of Lloa, then ascending through meadows, followed by a considerable stretch of wood, emerging on to open ground not far from the base of the highest point. Got into clouds early in the afternoon, and having no local guide were rather perplexed as to our whereabouts. Camped at 4 P.M. (at 14,000 feet), and sent back beasts and natives. Drizzle and sleet fell all the time we were camping, and we could see only one or two hundred yards around.

Mar. 22. From the First to the Second Camp on Pichincha.—In the morning it appeared that the tent was placed about half-way between the highest and the second peak. Sent out J. A. Carrel and Verity to ascend Guagua, and Louis Carrel to ascend the other, whilst I explored the neighbourhood of the camp. They succeeded in their missions—J. A. Carrel reporting that his peak (the highest) had been ascended before. Their accounts of the situations of the craters being perplexing, I resolved to shift the camp higher up so as to be able to take advantage of any temporary clearing away of the clouds. Moved up to a cleft in Guagua, and encamped this night in a sort of cavern (14,990). Min. temp. in night 29° Fahr.

" 23. *Ascent of Guagua Pichincha and return to Quito.*—The morning was as foggy as ever, and we entirely failed to see the craters, and were not even sure that we arrived at them at all. Finding that it was useless to search, I ascended Guagua with the Carrels; and upon arriving at the point which was reached by J. A. Carrel yesterday found that it was not the highest point, which had then been hidden from him by mist. This we now ascended, the way being the easiest possible with the exception of a few yards at the immediate summit. On the very highest point we found five or six stones which had been evidently put together by man, but by whom we were not

able to learn. As the weather continued as bad as before, we broke up camp in the afternoon, and returned to Quito, arriving there at an advanced hour of the night, having been well drenched on the way.

Mar. 24-26. At Quito.—In the evening of the 25th the Corsican innkeeper had a battle in his *salle-à-manger* with an ex-guard of the French army. The combatants charged each other in a most heroic manner, brandishing empty wine bottles, and closed in and fell amongst the chairs and tables to the serious detriment of the limited stock of glass and china. The *ex-militaire* eventually got uppermost and nearly strangled the innkeeper, and they were then dragged apart by sympathizing friends and allowed to finish the fray outside. The manners and customs at this Quitonian hostelry were rather peculiar. Amongst other things, the Corsican had an aversion to late hours, and any person who ventured to stop out after half-past 10 was locked out. Nearly every night one or another unfortunate found himself kept out in the streets, and hammered on the great portal until some other guest took compassion on him and let him in; but neither the Corsican nor his servants ever paid the least attention to such summons.

(*To be continued.*)

MIDSUMMER IN CORSICA. By DOUGLAS W. FRESHFIELD.
(Read before the Alpine Club, May 3, 1881.)

She hides her mountains and her sea
From the harriers of scenery.—LOWELL.

THERE are probably some present here to-night who, having recently looked up *Corsica* in their Encyclopædia, and discovered that it contains no glaciers and no peaks of five figures, are prepared to resent in their hearts, if not audibly, any presentation of the island before an Alpine audience.

If such there are, and if they expect an apology on my part, they will be disappointed. My view of the Club's purpose is, perhaps, different from that of some of its younger members—inclusive possibly of more forms of energy, and even self-denial. I cannot allow the claim of the school whose motto is 'a big peak and a big dinner'—of climbers, pure and simple—to be the sole representatives of our Club. But it

is far from my wish to depreciate their performances. I watch with the deepest interest when one of my acquaintances appears at a whole season's Meetings with the air of a Minister burdened with the most weighty of cabinet secrets. I observe him with amusement while he establishes on his scene of operations a solid base of bottled beer, potted meats, and plum-puddings. I sympathise sincerely with his triumph when he has crowned his year, and defeated the designs of Providence, by forcing his way up an old mountain by a track which was created solely for the descent of avalanches. And I am, or rather was, overwhelmed with delight when he transmits to the Editor of the 'Alpine Journal' a spirited account, or indeed any intelligible account, of his adventures. But I must confess to feeling no wish to emulate his exploits. In the first place, my answer to Mr. Mallock's question 'Is life worth living?' is not so decisively a negative as to make minutes which I have good reason to expect to be my last, my happiest. I agree rather with a not unknown mountaineer that such are 'bad five minutes.'

Again I cannot for long content myself in a crowd, least of all in a crowd of idlers where the mountaineer, who has with him a famous guide, can hardly escape, however modest his personal demeanour, the foolish questions of the table d'hôte and the lobby.

Moreover an hôtel book is, I fear, no longer my favourite form of literature. The fifteenth route up Monte Rosa has not all the interest of the first, and the concise practical details of early entries were more to my taste than the personal rivalries, issuing too often in what Carlyle would have called 'splenetic spluttery,' of more recent pages. Nor do I thoroughly appreciate even a perfect commissariat. For me half the charm of mountain travel still lies in its vicissitudes, of fine weather and bad, of plenty and poor fare, of success and failure, and more than half its value in the spirit of humorous endurance, for our mountains' sake, such vicissitudes call forth—the spirit which characterised the discoverers of the High Level Route, and the first explorers of the Graians. In few words, I am, I believe, more of a traveller than a gymnast or a sporting peak-hunter. I should regret to see our climbing assimilate itself to the lowest forms of sport rather than to the higher kinds of adventure. In my humble judgment the day when the travelling spirit altogether gives place amongst us to the gymnast's or the sportsman's, will be a bad one for the Alpine Club. Not but what, as I have already said, there is plenty of room for both, and we could ill afford to spare either.

On other grounds, however, some excuse for talking about Corsica may possibly be called for. Why need anything more be said or written about the island? Has it not already had more than its fair share of notice in contemporary European literature? Have not the Germans their solid and sentimental Gregorovius; the French, Valéry and Mérimée; the English, their practical and picturesque Lear, to say nothing of lesser volumes, from that Journal, which Dr. Johnson found 'in a very high degree curious and delightful,' downwards; even Alpine Clubmen Mr. Hawker's lively sketches? *

I owe perhaps my best reason for the present paper to François Devouassoud. 'Monsieur,' he said to me one day, when more than usually impressed by the granite mountains we were wandering through; 'I think that when "le bon Dieu" was building the Alps, he must have had a bit left over and have thrown it down in the Mediterranean to make Corsica.' Viewed in this light as a remnant of the Alps, Corsican mountains come clearly within the scope of our society, and call for more attention than we have yet given them.

But even if the island had been as much before us as other parts of the Alps, I could still find a plausible excuse for talking about it in the fact I have put forward in my title. The 'Alps in Winter' are supposed, and rightly supposed, to furnish a new sensation. Midsummer is as much 'out of season' at Ajaccio as Christmas at Grindelwald. The foreigners' hotel, where pulmonary patients who like quiet and cheapness and fear *mistral* congregate in the short days, has closed its doors. There is hardly a 'continental,' certainly no pleasure-seeker in the island. The solitary tourist finds himself as much alone in his glory as (to take a comparison near at hand and familiar to some of us) the lonely child whom the trustees of Lincoln's-Inn Fields admit on a hot August afternoon to their ample shades and lawns, perhaps in order to add a delicate final touch to the sufferings of the little crowd on the burning pavement outside. Shall I add such a touch to-night by describing early summer in the south to some who are bound to London till the autumn?

In putting on paper these rough notes of what I saw in Corsica. I have tried not to forget that my proper task is limited to rousing your interest in my subject. I have not scrupled to present mere outlines, to leave unfilled large spaces in my sketches, knowing that those who like can complete the picture by reference to the works of earlier travellers.

* 'A. J.,' vol. iv. pp. 269, 290.

Where I contradict some of these, I do so knowingly, because my experience has been different, and because I think you are likely to agree with me rather than with them. Climate and accommodation are two of the principal points on which this will be the case; but with Mr. Lear I think I am always at one.

Seventeen hours after leaving the port of Marseilles the steamer casts its anchor in the land-locked Gulf of Ajaccio. The approach to the island was in our case marred by clouds—positively their last appearance for the season in Corsica. The Gulf may in general be best compared to that of La Spezia. It lacks the gaiety, as well as the unique islands, of the Bay of Naples; the stately splendour, the oriental juxtaposition of rich plain and golden mountain of Palermo. It is a fine, rather than a fascinating landscape; the outlines are bold and picturesque, the details want the usual grace and variety of the south. Man has done little or nothing to decorate nature.

Ajaccio itself has a peculiarity common to all Corsican towns and even villages; its houses are too tall for the extent of the town. It looks as if a quarter had been cut out of a big city, where ground rents are excessive, and put down among the cactuses, aloes and orange groves of the Corsican coast. This abnormal height may be only a development of the ancient Corsican house, which was built high to serve as a fortress, having no windows near the ground. It seemed to me possible to trace the stages between the rude towerlike houses of the mountain hamlets and the overgrown warrens of Corte or Ajaccio.

The town is naturally full of Napoleonic pictures and statues. The best, by the late Mons. Viollet-le-Duc, represents the first Emperor on horseback, his four brothers on foot filling the corners of his pedestal. After reading Madame de Remusat's *Memoirs* one understands the difficulty the King of Holland finds in posing, or being posed, as a noble Roman, and is not inclined to be hard on the designer of what, as a whole, may be considered a very successful work. In the suburbs is an English Church which, strange to say, is an ornament to the place, the architect having made a singularly happy use of the richly coloured granites of the island. Beyond this a spacious drive and 'Rond Point' are in progress of formation, from which roads branch off up the hill and along the bay.

The sun was now shining, and the charm of the island began to fasten upon us. We mounted the red granitic hill-side, resting in a garden of palm trees among flowering cactuses, aloes raising their huge candelabra blossoms, scented magnolias,

pomegranates, myrtles, cistus, olives, oranges. Distant snows shone between the palm branches, a bare reminder of winter and the north, without menace to coasts secure in their midsummer glow, and responding to it with a wealth of blossom and fragrance unknown to our rain-beaten shores.

We had landed on Midsummer Day. A black patch on the 'Place' showed where a pagan bonfire had burnt itself out on the previous night. When dusk fell we were treated to a Christian celebration, consisting of a procession of several brotherhoods in green or red-and-white hoods, attendants bearing huge crucifixes, priests chanting, a band playing very secular music, and two little rival John the Baptists in sheepskins and gilt halos. One of the babies clutched a large toy lamb with gilt horns; his rival triumphantly conducted a live animal. A tall gaunt man in a brown robe rushed about from side to side, protecting the Saints from the familiarities of their contemporaries with a cross 8 feet long, which he brought down heavily on the shoulders of any obtrusive urchins. After marching round the town, the procession came to a halt in the lane next our hôtel, in front of St. John's Church. The street was illuminated, and coloured lights were burnt. In the clear dark southern gloaming the men of the brotherhoods in their old-world capes showed like unreal figures—ghosts of an old and passing order. The sharp rat-a-tat of the soldiery seemed to break a spell and disperse a vision. But who can foresee fate? Little did that drummer think that he was sounding his own, as well as the Jesuits' requiem: that the Republic was about to dispense with its *tambour majors* as well as its religious orders. What will the Rue de Rivoli be without them? It has been laid down by a Vice-Chancellor that circus horses cannot perform without a drum. Can French soldiers? It will be long before we shall believe it. What a pity Mr. Thackeray is not among us to write a 'Roundabout Paper' on the cheery sound, and all the holiday associations it is bound up with to travelling Britons.

Thus much of the city and religion of Ajaccio.

Before we run up and down the island, looking out for any peaks worthy to be devoured by Alpine Clubmen, let me try to give a rough outline of its mountain system, which is generally ill-explained and little understood. Ordinary maps show a great backbone, running more or less north and south, from Cap Corse to Bonifacio. Like too many generalisations, this does not correspond exactly with the facts.

There is a limestone ridge running from Cap Corse due south to a point opposite Corte, broken only in one place,

where the Golo carries through it the drainage of the central uplands. Its highest summits are Monte Stella, 4,570 feet, north of Bastia, and the Monte di S. Pietro, above Orezza, 5,445 feet.

Down the western side of the island your maps probably suggest a parallel chain running from Calvi to near Sartène. This is only true in a very restricted sense, as any mountain panorama at once shows the traveller. The watershed, of course, is where the maps place it. But the highest ridges run at right angles to it, that is, roughly, east and west. You can see their continuation in the capes of the western coast. The mountains, regarded close at hand, lie in blocks rather than in a chain—a common feature with granite.

It follows from this physical fact that in driving up or down the western side of the island one has to cross a pass of between 2,000 and 4,000 feet between each river basin. These basins, south of Ajaccio, are broad fertile valleys rising from the sea in slopes covered below with *maquis*, the Corsican bush, above with vines olives chestnuts and beechwood. Every one has heard of the 'maquis,' the scent of which, carried miles out to sea by the land breeze, warns sailors of their approach to Corsica. Imagine a common sprinkled with myriads of purple and white cistus blossoms, shining starlike in the pure sunshine, tall heaths, tough arbutus, frequent bushes of myrtle, box and other evergreen fragrant shrubs, which combine to diffuse through the light dry atmosphere a rich warm pungent scent. As the road winds up the spurs, chestnut groves and vineyards supplant the 'maquis,' dog-roses hang down from the hedges to rival the acres of cistus, the asphodels, already withered on the coast, are still in bloom, beside beech-copses where fox-gloves, tall purple orchids, and masses of common fern might, but for their classical presence, make us forget for a moment the Mediterranean.

Here and there, at rare intervals, a village shows itself. Unlike the closely clustered nests of the Apennines, Corsican villages generally break up into several groups of houses, thus compensating for their rarity by making the most of themselves. The church—outside the Castagniccia—has rarely a bell-tower. The bells are rudely hung on a strong wooden framework beside the building. Nor has it a graveyard. Only the poorest Corsican consents to be laid in common ground. To be buried in a cemetery with them appears to be equivalent to dying in the poorhouse with us. Each well-to-do family builds its own tomb, a whitewashed dome like those of Syria, or with classic columns and portico, on some

commanding knoll. The poor set a granite or wooden cross under their chestnut trees or by the wayside. The plan is not without sentimental advantages where land remains for generations in the same family and the population is scanty, and at any rate saves the Corsicans from a 'Burials Bill.'

It is perhaps difficult to give by comparison an idea of the landscapes of this part of Corsica to Alpine travellers. To those who know Cannes I should be content to say that it is like the Esterels on a much larger and nobler scale. The vegetation is similar. The mountains, however (putting out of the question Monte d'Oro and others which lift snowy heads in the background), are twice as high; the roads over them rise to 2,000 and 3,000 feet, and the broad valleys, when the blue bay turns into a valley, are not flat expanses like that of Fréjus, but undulating hill-regions, only valleys in contrast to the abrupt ridges which divide them. These ridges, again, are so wide apart, so broken, and (compared to the Alps) so moderate in height that they seldom for long confine the landscape, the boundaries of which are constantly shifting. There is no scenery like this, so far as I know, on the Italian Cornice; for there is no spot where hills and valleys equally grand in scale and picturesque in form throw themselves so boldly, or open so frankly, on the deep sea. In other words—to go to the prose and root of the matter—nowhere in Italy do successive ridges of granite break at a right angle on the Mediterranean.

But I have lingered, perhaps, too long near the sea level for my present company. Patience! We have before us an object which will excuse these wanderings; we are on our way, as someone once wrote at the Grands Mulets, to 'higher ground.'

From the shore at Ajaccio two broad snowflecks are seen over the nearer ranges far away to the south-west. I had no difficulty in determining that the mountain which bore them must be the same I had noted in April from a Sicilian-bound steamer as dominating all the south of the island, the Monte Incudine of maps, the Incudiné of local use. We are now making for its snows,

Having halted at Cauro and Ste. Marie Ziché (at both places we found excellent inns) and crossed two chestnut-crowned passes, our carriage brought us early in the afternoon to the baths of Guitera. After the excessive luxury of many continental baths the biblical simplicity of the place was refreshing. We found three or four elderly females in dressing gowns sitting up to their necks in a round pool of warm sulphur water in the open air. Our curiosity satisfied as to the fountain

and its nymphs, we ran down to the bank of the Travo, which flows under the bath-house. It is a delicious trout stream, purling and swirling along under thick evergreen shades between red stems of cork trees and banks of eight-foot-high *Osmunda*.

The road up to Zicavo follows its banks for a mile, till the torrent from Monte Coscione bursts out from a cleft in the eastern hills. It then climbs up and into the gorge, rising some 1,500 feet before it joins at the top of the scattered village the 'Route Nationale' from Sartène to Vivario, which traverses the centre of the island.

The two most important sheets of the Corsican *État Major* map are still unpublished. On general maps Zicavo appeared the nearest village to our snow-patches, which were now, however, completely hidden by intervening ridges. We took a charming walk towards sunset on the Sartène road. It runs terrace-wise along the steep face of Monte Coscione, through a romantic evergreen forest. Two torrents are crossed, tumbling down out of pathless ravines. Just beyond the first we found a track for the morrow.

Early next morning we were mounting a zigzag path which climbs steeply under the shade of noble chestnuts. Presently the hill flattened in front and the forest gave place to asphodel meadows and pastures capped by granite blocks. Here begins the plateau of Monte Coscione. A large tract of uplifted land, with an average level of 4,000 feet above the sea, is divided into shallow glades rather than glens by low ridges, one of which is the watershed of the island. Much of it is bare, but the portion we crossed was about equally divided between pasturage and beech forest. These beech forests are the noblest of their kind. The trees themselves grow to an immense size, and the ground aids to show them off. It is sufficiently undulating to lend effect to individual trees, but not mountainous enough to dwarf them. The trunks are covered with long streamers of moss; granite blocks richly stained with lichens lie about amongst the fallen stems. Bright trout streams flowing through open lawns, where cows and horses were pasturing, gave life to the silence and solitude of the primeval wood.

After crossing several streams and ridges and passing some stone chalets, directing our course by faith rather than sight, we found ourselves on pasturages descending towards one of the glens of the eastern slope, with the broad snowstreaked mass of Monte Incudine still some way off. To reach it we had to descend to the stream, a charming companion, here spread-

ing itself over⁴ smooth sheets of granite, there buried in a deep channel whence its waters burst out suddenly victorious.

Monte Incudine presents on this side long steep slopes of broken boulders covered with low brushwood, and has much the appearance of a Scotch or Welsh mountain. The highest ridge is composed of a very friable granite rock, worn smooth in places but broken by clefts, the last of which is deep enough to render access to the eastern top difficult without a long circuit or the aid of the rope. To the right of the summit a huge block,

Couch'd on the bare top of the eminence,

served as a fingerpost in the ascent. It would be easy to descend into a valley leading directly south towards Zonza, or north-east into a very wild forested glen opening towards the eastern coast.

The view from Monte Incudine is probably the most beautiful in Corsica. All the island south of Ajaccio (and that town itself) are in sight. The panorama is full of variety and picturesque incident. Steep pine-clad hills sink abruptly to the eastern sea, on which the vessels seemed to crawl at our very feet; glens open southward on a rich glowing valley; the blue depths of the bays are fringed with a double edge of white sand and shallow green water. The noble granite *aiguilles* of the forest of Bavella, a strange array of horns and pinnacles, run across a foreground; to the left the long fiord of Porto Vecchio runs far into the land; in the centre of the picture are spread out the broad Straits of Bonifacio, studded with pale isles and islets.

Two larger than the rest are associated with heroic names. On the left is Caprera, the home of the liberator of the Two Sicilies. The one beside it, Maddalena, is linked with even greater memories, with the great true hero and the great sham hero of modern history—Nelson and Napoleon. Under its lee, in a bay Nelson christened 'Agincourt Sound,' the British fleet lay for months before the battle of the Nile, watching for the French squadron sheltered behind the guns of Toulon.* Two silver candlesticks on the altar of the village church record Nelson's gratitude for the friendly services of the inhabitants. It was in attacking the same village that Napoleon, in 1793, first saw fire and met with a repulse, due, it is said,

* Nelson was very strong on the necessity of England's holding some island in this portion of the Mediterranean, and urged the annexation of Sardinia with a force and eloquence, excelling that we have seen lately expended in a not wholly dissimilar cause.

to the inefficient way in which his expedition had been provided by old Paoli, then Governor of Corsica under the French Republic.

Beyond Caprera, the bold headlands of Sardinia break down into the opal sea which stretches Sicily-wards. On Sardinia's further flanks lies the shadow-like Asinara. Eastwards, we overlook the level plains and lagoons of Aleria. On the hill beyond Cervione is just distinguishable—memorable to us as the capital of the mock-king Theodore, an absurd personage as to whose history I have, I flatter myself, made some discoveries, involving in his adventure both the Turkish and the English Governments to an extent hitherto unsuspected by historians. Westwards we command the capes and deep bays of the coast as far as Ajaccio. Northwards, Monte Rotondo, seen in its noonday nakedness, is no very imposing feature, and but for the Paglia Orba whose curious tusk protrudes on the left, the outline of the central group is tame. For mountain views the Alpine Clubman is spoilt, but for sea views, and they are not less beautiful, he must go far, perhaps as far as Greece, to find such another.

I do not mean to describe the central carriage road through the forests of Marmano and Sorba and past Ghisoni to Vivario. Both Ghisoni and Vivario possess excellent inns. They also, though mere mountain villages, each boast a fountain, one with a bronze Neptune, the other with a Diana, worthy of a large town. The descent from the second pass into Vivario is very striking. It is effected by excessively sharp zigzags through a noble pine forest. Between the branches tower the bold forms of Monte d'Oro, Monte Rotondo, and, in the distance, behind the golden uplands of Corte, the crags of Monte Traunato. By evening light it is a magnificent mountain view.

From Vivario we crossed a mule pass (inaccurately laid down on most maps), the Bocca di Manganello, which leads to the Baths of Guagno, traversing the range south of Monte Rotondo. The distance is counted as forty kilometres, or some ten hours. In place of ascending Monte Rotondo from Corte—the usual plan—we took it on our way over the pass. I cannot recommend this course. The valley between Monte d'Oro and Monte Rotondo on the eastern side of the pass is long and dull. The forest has been grievously injured by fire and woodmen, and the road up the glen is a mere bed of rough stones. It was the only thoroughly disagreeable piece of walking I came upon in Corsica, and would be good training even for the Vallon des Etançons. Future travellers, therefore, should take the ordi-

nary route up the mountain and descend to Guagno by ours. But I most warmly urge them not to miss the descent.

From our pass we looked down a steep narrow chestnut-forested glen to the western sea. A pleasant breeze blew from it, and tempered the mid-day sun as we climbed the long ridge which fell from the north towards us. Where it was first broken into rough teeth we kept under it on the eastern slopes, and then up over snow and shale to a rounded crest. Another top rose beyond it. Arrived on the second we found that we had a good deal more than we had looked for still before us. Five hundred feet below at the bottom of a steep bank of snow lay a frozen lake. It was surrounded, except to the south, by a bold fence of steep shattered granite crags; the highest immediately opposite us showed a face which anyone unused to Alps might have thought formidable. The snowslope at our feet was steep enough and not too hard for glissading. We were soon in the frozen cirque skirting the head of the lake, a strange and striking scene anywhere; doubly so at midsummer in the latitude of Perugia.

The ascent of the opposite crags cost me some pains. There is one easy way to the right. François despised it, attracted by a granite staircase nearer us, the last flight of which proved incomplete. I soon found myself clutching the crag above my head with 'hooked hands,' and moving my feet about vainly for foothold, while François, having relieved me of my umbrella, remarked with more than his usual calmness, '*Ça va bien.*' For a second I had one of those distinct visions said to be given to drowning men: only it was prospective, which is, I believe, unusual. I saw the present Editor of the '*Alpine Journal*' revising the proof of an 'obituary notice,' in which, after recounting with his habitual accuracy the fractured condition in which his predecessor had been found, he proceeded to demonstrate that in climbing even the easiest rock-peak with an umbrella, but without rope, it was undesirable to attempt short cuts, and wound up with a judiciously qualified congratulation to climbers in general that a life spent in preaching '*Rules and Regulations*' should have been crowned by so useful an example of the result of their breach. However, the granite was very sound and it was not difficult to avoid its smoothnesses, so that before long we were in the gap of the ridge at the western base of the final tower, a rock fifty feet high. This was easily turned, and in five minutes more (about two and a quarter hours from the pass) we stood beside the stone man.

Towards Corte the mountain fell away in long steep slopes,

of which, for at least 1,000 feet, snow covered the most part. It must, I think, be up this side that the ordinary route runs.

The view did not impress me. The central uplands which form a large portion of it, are bare and arid, and the ridge of Monte Cinto stretched across the northern horizon like a long flat screen. Comparatively little of the coast is seen in any direction, but most towards the west. It was curious to notice how completely the tops of the mountains between us and the Cinto ridge were flattened down, while the crest we stood on was a set of bristling teeth. There seem at first sight to be two makes of granite in Corsica, one friable and unable to resist sub-aerial denudation; the other, which bursts out in the Cinto range, Monte Rotondo, Monte d'Oro, and, above all, in the Forest of Bavella, hard and defiant of the elements, and fronting them with bold spires and pinnacles. But possibly the very fact of spires and pinnacles is a proof of special weathering.

On our return François could not resist one sweet little snow-couloir at an angle of about fifty, but for the rest we followed the proper route which keeps to the left or south under the ridge till a perfectly easy way down to the lake offers. Striking for its outlet we crossed the stream on the ice, and climbed out of the cirque by a short sharp wall of 150 feet, whence it was easy to traverse at a level to the point below the teeth on the ridge we had come up.

In place of returning to the pass, we now bore to the right, and reached the head of the glen we had seen below us, by keeping north of a rocky boss. The descent of some 4,000 feet was very long and steep. It was also pathless, or very nearly so, for the whole distance; and the chance of spraining an ankle—an accident one hears of so seldom that one may well fancy not one but a legion of good little angels employed to protect mountaineers—was materially increased by the distraction in front. If from the top the panorama had been disappointing, the failure was more than made up for by the lovely views of the Gulf of Ajaccio and the western hill country which was now spread out before us in all its beauty and variety. Jagged ridges, noble chestnut forests, swelling hills and vales everywhere, and, beyond all, the Midland Sea, '*toujours le grand beau lac*,' as François translated it.

Somewhat knee-weary we reached, in company with a flock of lean goats, the chalets at the foot of the pass. There are few pines hereabouts; the forests are of broad-leaved trees, mostly chestnuts. In the upper glen there is for some distance only the worst of tracks. The scenery is strangely wild, no villages

or clearings break the noble monotony of rock wood and stream. Lower down a second chalet and a few stone houses, not permanently inhabited, are passed. Very bold granite pinnacles cut the sky, and the landscape, if not on so large a scale, is wilder and more romantic than in our familiar haunts. I have pointed out elsewhere—in speaking of the Caucasus and of Val Maggia—that the weak point in almost all Alpine scenery is that before grandeur begins sylvan beauty ends. The sycamores above Rosenlauri, the beechwoods of Molveno, the chestnut groves of Val Maggia are among the exceptions which prove the rule. Corsica, from its latitude, and also from its mountains beginning at the sea level, escapes this drawback. This feature in its scenery, its glorious beech and chestnut forests, has not been sufficiently insisted on, partly because many travellers have been here too early in the year to see them to perfection, partly because they have felt it their duty to pay their first homage to that *rara avis* among European conifers, the Corsican pine. It deserves all respect—how much respect those will feel who go straight to or from Corsica to the Alps. The Alpine pines, after these island giants, look only fit to be put in a box and given to one's children to play with. The great cedarlike trees of Valdionello or Aitone more than equalled any expectations I had formed. Mr Lear's woodcuts barely do them justice, for the effect of the forest is not so much that of a collection of Aaron's rods as might be gathered from his plates. It is true the pines have a tendency to run to stem, but many of them are fine cedarlike trees. One more criticism on the best English work on Corsica. The plates, partly from the inevitable want of colour, partly from a want of fineness in detail and aerial effect—also, perhaps, almost inevitable—give a gloomy effect to many of the landscapes which seems to me the reverse of the true one. Bear this well in mind; Corsican scenery is not in the least stern or savage; it is rich, splendid, shining, romantic.

I return to our path. By a happy accident my rough map indicated exactly the point at which the stream had to be crossed. A steep ascent of a few hundred feet was followed by a long fairly level terrace commanding beautiful views down the valley of the Liamone towards Vico.

Guagno, the first village west of the mountains, lies in a different glen to that we were descending on the southern spurs of a ridge which divides two of the sources of the stream. Our path, therefore, after circling round several spurs, crossed by a convenient gap the crest on our left. Five minutes later as dusk fell we came on the first scattered

houses and pigs. Pigs in Corsican villages are as predominant as in Ireland. The village inn was homely enough at first sight, and the maiden in charge was undisguisedly embarrassed in her mother's absence at such late arrivals. But, despite her apologies, she produced a good supper and a clean bed. Corsica is one of those happy countries where the people themselves cook and eat well. Their soups are strong, their mutton and potatoes excellent. Those who can live and walk on the warm water and sodden veal of the German Alps, or on the flintlike bread and red cheese which test peripatetic philosophers within the twenty-five mile radius from Charing Cross, need not fear to trust themselves here. The cup of coffee which concludes the meal is worthy often to be sipped crosslegged with the face turned towards Arabia. Corsica has, her historians say, had direct connection with the East—Phœnicia or what not. As we sip our coffee, François and I count over the oriental traits we have noted in the island—*Inprimis*, coffee; second, mutton stew; separate domed tombs; the taciturnity, general laziness, and lounging habits of the men; the custom of making the women work. For Eastern Christianity corrects the Moslem idea that woman is a plaything, and decides that, as she is not that, she is an agricultural implement.

Daylight showed a lovely view over forested glens, and a charming walk of six miles in the brilliant morning sunshine down a good road brought us to the Baths of Guagno. This is the largest bathing establishment in the island, about 50 miles from Ajaccio and 10 from Vico. Its accommodation is on a level with that of the Baths of Masino or Santa Catarina; the bedrooms are perhaps cleaner, the food plentiful, but somewhat rough. It was the only place in the island where I found a supply of Paris papers. As a rule the Corsican is content with his own journals, and his journals rarely think it necessary to mention 'continental' events. This is no new peculiarity, for Boswell tells us that the 'Corsican Gazette,' of his time admitted 'nothing but the news of the island, no foreign intelligence nor private anecdotes;' but then it was published once in three months. The situation of the Baths is not so well suited for excursions as either Vico or Guagno, and the inns at either place being supportable, they will not detain the passing traveller. Their season is from July 15 to the end of August.

I shall not ask you to follow me closely in my further wanderings through Corsica. From Guagno I went by Vico and Evisa and the forest path of Valdioniello to the Niolo, and

thence across a pass and down the picturesque gorge of the Tavignano to Corte; crossed over the limestone range to Orezza and the eastern coast, and ended up with a tour of the long northern promontory, Cap Corse.

In passing through the Niolo I had perfect views of the Monte Cinto range. Both the Paglia Orba and Monte Cinto itself are accessible from this side. They are connected by cliffs in which a pass of some difficulty may be discovered. I passed them by for the time, chiefly because I wanted to leave myself a reason for returning to the island in company with a friend, to whom they might serve as a bait. The southern side of the chain is perfectly bare and arid, like all the Niolo it overhangs; but the glen above the forester's house in the Forest of Valdoniello offers a pleasant access to the Paglia Orba. These peaks should be climbed at a season when there is a fair chance of seeing the view of the Continent, which should be the great feature of their panorama. At midsummer the far-off horizon is, as a rule, too hazy.

I have done with mountain ascents, but there are still some mountain scenes I cannot leave unpraised, even though my best praise must altogether fail to do them justice.

Vico, Evisa, La Castagniccia, Pino, Nonza, are names which will not easily pass from my memory. Each brings back a vivid and distinct picture, which I must endeavour, however poorly, to reproduce.

Vico is a townlet planted on the side of a richly-wooded hollow, shaped like a theatre, and facing the valley of the Liamone, which leads the eyes up to the crags and chestnut forests of the central mountains. The river escapes through a cleft to the right under rugged hills. At the back, shutting out the sea, rises a conical chestnut-covered peak. Near at hand, hamlets are scattered amongst the vines and maize-fields, and a convent, with a white church and a terraced garden, shaded by tall magnolias, occupies the opposite brow. The opposite hills catch and reflect to us the sun's light long after Vico and its chestnut groves are in deep shadow.

Evisa recalls a wilder and more wonderful landscape. The village stands in the centre of a mountain-girt basin on a high promontory which projects from the central range between two deep gulfs—gulfs hollowed out to a depth of 2,000 feet between stern scantily-wooded granite cliffs. They join beneath it in a gorge which cleaves through the granite down to the sea.

Imagine on either hand two huge bright-red rock pylons, 4,000 feet high; draw across between them, like a curtain, the intensely opaque blue sheet of the midday Mid-

summer Mediterranean, its horizontal line meeting and contrasting with the vertical outlines of the crags, and its deepest blue with their strong ruddiness; spread overhead, a veil of vapourless sky, white with excess of sunshine, fringed where it sinks down to meet the sea-horizon with the strangest indefinable amethystine colours. The scene does not seem as if it could be part of the same planet as the grey-green earth we northerners belong to. It is weird and mystical, not out of keeping with that last book of the Bible which was written in a Mediterranean island. But Hebrew exuberance overlays the austerity of nature with too lavish imagery. Dante would have done better here; with a few of his direct lines he might have planted Evisa for ever on the Mountain of Purgatory. The rich chestnut-crowded hollow below the village might serve as a fit halting-place for noble souls on their journey from sea to summit.

Turning homewards we see Evisa* from a more human point of view. Behind it the pine forests rise in deep shadowy folds up to a broad mountain crest, the pass to the Niolo.

Beyond the great forests lies a broad bare upland basin, closed in on all hands by mountains, bare rugged and, on the north, precipitous. The lower slopes are brown and monotonous, the valley-bottom flat featureless and defaced by a half-made road. The scenery is, in a word, ugly. No sooner has a label been found to save further trouble than one is aware that the first painter will quarrel with the definition.

There is nothing picturesque in form in the Niolo, but, at certain moments, there is rare beauty of colour. At sunset the air and hill-sides glow with reds and purples, the sky is strangely luminous, and objects on the earth seem by reflection to gain the same quality. Those who have been on the Persian Highlands may easily picture the local colouring; those who wish to see Persia without the journey had better pay a visit to the Niolo. The inns there—at least the one we tried at Casamaccioli—are bad and full of insects.

Passing by Corte we mount from Ponte alla Leccia by long wearisome zigzags to Morosaglia, Paoli's residence, where a large school or college forms a more living monument to Boswell's friend than his monument in Westminster Abbey.†

* There is a capital country inn at Evisa, and, besides the road from Vico, a good road to the coast. It is an excellent centre for travellers.

† It is always called the *École Paoli*. But it appears that Paoli's benefaction was confined to founding a Mastership there. See Lear's '*Corsica*,' letter quoted, p. 261.

For two miles further the road winds upwards. Looking back, a local thunderstorm sweeps over the bare snowy crests of Monte Cinto and Monte Rotondo, its cloud-masses sharply defined against the all-pervading blueness, its shadow lying blue athwart the sunny red and gold of the nearer hills.

At the Pass of Porto one of those magical changes, the chance of which makes any *pass* an excitement, awaits us. The uplands are left behind. In front stretches a new region, the Castagniccia, or Chestnut Country. A maze of glens and ridges runs up against the mountain on which we stand; hill and vale alike are draped in chestnut forest, swathed in bracken; not even England can boast such shining greenery. Villages and convents, Italian in character, are scattered on the ridges and slopes. Wide and shining, behind these lovely green hills, spreads the Tuscan Sea, strewn with islands: flat Pianosa, mountainous Monte Christo, Elba, Gorgona, floating in the haze between sky and water. Along the horizon, marking the line of the mainland, great masses of cumulus cloud are piled up into the likeness of mightier Mont Blancs and Jungfraus.*

Fresh and green as any English glade, spacious and exquisite in its arrangement and aerial distances as Greece or Asia Minor, this view is unsurpassable in loveliness. It is surely destined, sooner or later, to a more than European reputation, for its beauty is of the kind which appeals to every taste. 'Quite too lovely,' fair New Yorkers will some day call it, and I accept, with a shudder, a phrase which I can only amplify.

The terrace road, as if loth to lose the view, circles for several miles among the ferns and foxgloves at the base of Monte San Pietro, before it plunges down, past two picturesque hamlets—provided with inns for water-drinkers—into the depths of the chestnut forest, where, beside a stream, in a situation recalling the Baths of Lucca, nestles the source of Orezza, a spring producing a nasty but wholesome mineral water exported to all parts of the Continent.

All the guide-books talk of Cap Corse. But they fail to give prominence to the facts which give the key to the scenery of its two coasts. Down a promontory, eight to ten miles wide, runs a range 3,000 to 4,500 feet high; its crest is

* This is not a touch added for effect. The illusion was singularly complete, so that François—whose enthusiasm for this view almost exceeded my own—seriously pointed out to me a snow-peak in the direction of Rome!

close to the western coast, its valleys run eastwards. Hence the western Cornice is a terrace along an always steep, sometimes sheer, mountain side, while the eastern crosses a succession of low maquis-covered spurs, and is, beyond Cap Sagro, in parts monotonous and almost tame.

Pino is one of the most beautiful sites on the western coast. It is also important as the spot where the cross-road through the Vale of Luri and under Seneca's tower—in truth a Genoese watch-tower on the spine of the cape and commanding both coasts—falls into the western Cornice. The village groups itself in the most picturesque way imaginable on a hill-side broken by a deep ravine. Down on the seashore above the little Marina, where the one fisherman keeps his boat, is a large convent; a church occupies a projecting brow 400 feet above; higher still, and right and left, every vantage-ground is occupied by groups of well-built villas, by an old Genoese tower, or a domed whitewashed tomb. It would be easy to believe a scene-painter had 'arranged' the landscape. The slopes are terraced into gardens of *cedratiers* and lemons, olive-groves and vineyards, sheltered from the rough gales of winter by high palisades woven of Mediterranean heath from the neighbouring '*maquis*.'

After a day of blinding splendour we watched from the '*loggia*' of the little inn the sun sink upon the broad sea, firing a long track across the waves as it fell, a vivid blazing ball, beneath the waters, and bringing into sight for a few moments on the northern horizon shadows warm with a dull reflected glow, which can hardly have been clouds, for they had the form of the Maritime Alps.

Nonza, further south on the same coast of Cap Corse, is one of the most curious villages of the island. It stands like an eagle's nest, perched 1,000 feet above the sea on a black rock on the mountain side. Its houses, built level with the edge of the cliffs, formed in olden days a sufficient rampart against marauders. On one side of the little piazza the view is open down the steep zigzag way to the Marina, where on the rock-bound coast the dark blue waves, stirred by a night of west wind, had suddenly joined battle with the brown coast. The waves leapt up, green where the light shone through them, swishing and swirling, rushing and roaring into the caves, before broken into foam they fell back on to the masses which bore on unceasingly to their support. On our backs the sun burnt like a great fire; against our faces as we stretched across the parapet there rushed up from the sea an air fresh and cold as that which on a summer's day in the Alps pours out of the

chasm of a great waterfall. 'Pour moi j'aime mieux ces avalanches-là que toutes les avalanches du Mont Blanc,' exclaimed François. The comparison was original but not new.

Cliffs of emerald topt with snow,
That lifted and lifted, and then let go
A great white avalanche of thunder—

Mr. Lowell has written of.

I might add many more wayside sketches from the Corsican coast.

Romantic Luri, surrounded like some Eastern village by rich irrigated gardens, with its incongruous citizens—*de retour d'Amérique*—in the strictest Transatlantic Sunday best, chimney-pot hats and black frock coats, reading the last placarded speech of Gambetta under the olive and lemon groves outside the church, while the women congregate in the deeper shade within.

The first view of the Gulf of St. Florent and the hills of the Balagna, crowned by the snows of Monte Cinto, as seen from the terrace road near Centuri, across a foreground of red and black rocks hollowed out by the salt wet winds into the strangest caves, and fretted like a natural Alhambra.

The glen of the Serraggio, near St. Florent, with its column of oleanders, two miles long by one hundred yards wide, all ablaze with huge heads of pink blossom, escorting a bright stream to the very edge of the purple waves.

The double coast-view from the pass between St. Florent and Bastia; Bastia itself, backed by its many-folded screen of olive-clad mountains—Cadenabbia turned into a seaport.

I shall conclude this fragmentary paper with a few general remarks.

I found the climate (at the end of June and beginning of July) most agreeable and invigorating. Mr. Hawker, on the contrary, speaks of Corsican air—even of the mountain air—as soft and enervating. I can only repeat that, during my visit, the dry, pungent air, the fresh sea-breezes, the stimulating alternations between light, if strong, sun-heat and a delicious shade temperature seemed to put more life into one in an hour than three months of east wind and north sea on the healthiest spots of our own coasts. The sky was as a rule gloriously and perfectly clear, except on days when an afternoon shower gathered on the central range, which, like Ararat, is a great cloud-creator. Every sojourner on the coast of Provence has had opportunity to observe how above the white island in the blue breadth of sea there grows, as the day goes on, a white or

golden island of cumulus cloud in the blue breadth of sky. This canopy, which sometimes hangs suspended high above the peaks all day long, sometimes breaks on them in rain and thunder, of course modifies the climate. Still the summer months are invariably fine. Once or twice on asking 'when the weather was likely to change?' I was told, as a matter of course, 'About the middle of September.' Happy island, where American cyclones cease from troubling, and weather prophets have three months' rest! The sun's rays are intensely bright and keen, but the heat of the atmosphere is tempered by the constant breezes. In the shade, and at night, it was constantly fresh, and sometimes chilly. I started from Ajaccio at 5 A.M. on June 26, with a rug over my knees; ten days later I found, at 6 P.M., the wind on the pass between Bastia and St. Florent too cold to allow me, being heated by the ascent, to sit down with safety. The freshness we enjoyed probably partially disappears later in the season. But the climate appears to compare favourably with that of the mainland.* On crossing to Tuscany, we found Florence baking under a temperature of 90°, and a few days later the much damper, electricity-charged warmth of the dolomitic region proved less conducive to activity than the dry brilliancy of Corsica. No one who can bear early summer in South Tyrol need fear it in Corsica. I mention these personal facts, because my evidence as to climate has been sometimes impugned on the ground that I have an abnormal and unnatural love of heat.

Corsica, though in a far less degree than Sardinia, is subject to fevers: even one part of Ajaccio has been ill spoken of. I was assured, however, that the evil had there been extirpated by planting and draining. The plains of the eastern coast, however, are poisonous from July to October, and it would be foolish to sleep in them after May. The rest of the island seems safe enough, although it must be remembered that in the south any spot surrounded by untilled or marshy soil may become dangerous at seasons when alternate wet and warmth draw up the exhalations of the soil. A quinine pill, taken every morning, has in many journeys proved in my own case and with my companions a specific against ill of this sort. Spring or early summer is of course a far safer season than autumn.

My opinion as to the beauty of the scenery has already been sufficiently indicated. I at any rate know of no such combination of sea and mountains, of the sylvan beauty of the north and the richness of southern forests with their red stems and

* See Miss Campbell's Statistics in 'Southward Ho.'

fragrant undergrowth ; no region where within so small a space nature takes so many different sublime or exquisite aspects as she does in Corsica. Palms, cactus and orange groves, olives, vines, maize, and chestnuts, the most picturesque beech forests, the noblest pine woods in Europe ; granite peaks, snows and frozen lakes—all these are brought into the compass of a day's journey. Nor are they ranged in regular succession. Here the granite plunges in mountain masses upon the waves ; there the chestnuts spread up to the height of 6,000 feet on the rude crags of the central range. The atmosphere aids the scenery. The sun-suffused summer skies have a lucidity worthy of Athens herself, and the colours of land and sea a brilliancy which makes Italy look pale by comparison. Everything is as novel to the Alpine climber as if, in place of being on a fragment of the Alps, severed only by one hundred miles from their nearest snows, he was in a different continent.

In Corsica it is difficult to realise that Italy is the nearest land. Whatever likeness there may be in details between Corsican and Italian scenery—and there is not so much as might be expected—in sentiment they have nothing in common. On the island we miss, or escape from, all historic associations, all artistic production. History, unless we go back to far-off colonisations or local struggles, is a blank ; art hardly shows itself. There are no landscapes studded with cities of famous men. The far-apart villages, and still more the scanty cultivation, give an air of antique wildness to the valleys. You have but to get off a road—the roads are sorely out of keeping from the artist's standpoint, though in excellent repair from the traveller's—to feel yourself in the time of Cyclopes and lotus-eaters. The mariners still talk of all outside the Straits of Gibraltar with Homeric vagueness, and I heard one day an argument as to the shape of Africa which might have been held more than 2,000 years ago by Phœnician mariners.

The mountaineer will discover in the island no impossibilities or problems in climbing requiring weeks or months to solve, but in the Cinto and Rotondo ranges plenty of rough scrambling, and, for nine months in the year, plenty of snow.

As for the people, I found them friendly and intelligent. The traveller landing from Italy must think them reserved in their greetings ; the traveller from France may be surprised by their silence. But if their words are slow, their understanding and action is prompt ; they treat the stranger honestly and with genuine goodwill. They are still very far from having arrived at the definition of the Swiss dictionary—'*Tourist*, a migratory biped, taken for the sake of its fleece in the summer

months.' Every host, driver, or muleteer I met with was ready to do his best to comply with the somewhat out-of-the-way requisitions of an English traveller who was not a 'milord' driving from his yacht at Bastia to his yacht at Ajaccio. Italian is, of course, the language of the country, but French, the official tongue, is employed in the newspapers and generally understood. The solitary traveller will generally be invited to join the midday or evening meal of the notables of the village, who frequently board at its principal inn, where he may pick up scraps of local politics. At Ste. Marie Ziché I sat down with the mayor, the curé, the lieutenant of gendarmerie, the tax-collector, and a chemist sent by Government to counteract the phylloxera.

Local events linger on in the people's memory in a way which aids one to form a more definite idea of the origin and value of ancient history. The English occupation of 1794-6, when George III. was actually proclaimed King of Corsica, is well remembered. We were told a story of an English detachment having been poisoned by roasting their dinners on spits of oleander wood! At Guagno, we found Homer bound in the parchment of an English settlement. The fights with the Greek colonists of Cargese are talked of as recent events, though 150 years old. Paoli's portrait—that of a quiet, good-looking gentleman with a pigtail, hardly suggesting Dr. Johnson's description of him as having 'the loftiest port of any man he had ever seen'—hangs everywhere; and no Corsican fails to remind one that he is buried* in the cathedral church of London (meaning thereby Westminster Abbey). I wonder if any good Tory protested at the time against a conspirator being commemorated so near the Plantagenets. I am bound to add that the Corsicans showed a culpable indifference to the heroic and successful efforts of Mr. Briggs and Mr. Harrison to prevent a second Corsican being thus honoured.

Politics are always bitter in proportion as they are local, and the strife between Republicans and Bonapartists doubtless runs high. But even in Corsica Bonapartism is a lost cause, none the more likely to rise from the tomb because its monument is among those of less ephemeral royalties, whether at Windsor or Westminster. Our innkeeper at Corte, and his wife, lost their tempers, it is true, because we hired a Republican mule. There was much joking one day because the *chef-du-chant* had in the middle of the service suddenly refused to chant the 'Domine,

* In fact Paoli is buried in St. Pancras, where his funeral cost 500*l.* His monument only is in the Abbey.

salvam fac Rempublicam,' leaving the poor curé himself to supply the long word which stuck in his choir-leader's throat. 'Et monsieur le curé faisait bien trembler la République, au moins dans sa voix,' the story ended.

The suppression of religious orders was, of course, a topic of the day, and seemed generally approved of by the middle classes and disliked by the lower. 'It is a noble thing to get rid of so much idleness,' said a noisy young country-town official. But he did not receive with much favour my suggestion that in order to eradicate *that* disease in Corsica a serious government might perhaps follow up the suppression of convents by that of cafés.

The Bandit is a thing of the past, except in the sense that a man occasionally takes to the bush after committing some offence against the laws. The traveller is absolutely safe throughout the island.

The tradition of the Vendetta is still alive, and is perhaps something more than a tradition. It is hard, however, for a stranger to judge. If carried on at all, it is in a hole and corner way, and wholesale murder no longer darkens the mountain sides.

The best vendetta story I heard was from a driver at Vico. One of his brothers unluckily called a man of Bastelica a 'Lucquois,' which is as much as saying 'an honest day-labourer,' the grossest insult you can offer to the true-born Corsican. The insulted Bastelican, with his clan, consequently fell on my informant's brothers as they were driving their carts near Cauro, killing one and throwing the other for dead over a bridge. The wounded man lived only a few days. The reprisal, so I was told, consisted in the destruction of the Bastelican family, all except one child, who was still living. It was almost convincing when, as we passed two rude crosses by the roadside, our driver lifted his hat, saying, 'There they lie, my poor brothers.' But I confess to still suspecting that a legend of older days was (after a manner not unknown to Alexandre Dumas) being appropriated for my benefit by the story-steller.

A 'bandit' was actually captured by the gendarmerie on the day of our passage through Orezza, and we heard his story from the lips of his captor on his return from the chase. It seems sufficiently characteristic of local manners to be worth retelling.

The hero, of high repute as a herbalist in the country side, had been called in to attend a married lady. The physician, despite his ripe age of 62, unfortunately forgot his professional

position and wrote odes instead of prescriptions. So far all was well, at least in the eyes of the law. But one day the sexagenarian lover discovered he had a rival of half his age. 'Le mari n'était pour rien en tout ça,' interposed the lieutenant who told the story. The passionate old profligate resolved on revenge, but happily for the younger man he, in his jealous fury, rammed two bullets instead of one down the barrel. The charge was insufficient to carry both, and the victim's back was peppered in place of being perforated.

The physician now felt obliged to take to the bush, where for a month he lived on what friends brought him, hearing, according to his own account, in every breeze the approach of justice or the vendetta. At last he could no longer resist paying a visit to his home. The lieutenant heard of it, and set off with his men. After a long night march through the chestnut groves they surrounded the house where the 'bandit' lay. At this moment the rival he had wounded appeared on the scene with his gun, and begged the lieutenant not to interfere in an affair which was his to settle. He was soon sent about his business.

When the house was entered it was found that the 'bandit' had barricaded himself in an inner room. While his daughters were imploring that he might be left a few moments to come out peaceably, a report was heard within. The door was at once burst open, and the old fellow discovered with a pistol beside him and a cup of poison at his elbow. He had grazed his ear, and swallowed his potion!

The lieutenant seemed from his own account to have been quite equal to the situation. He sent for a pail of milk, and made his prisoner drink till he was sick. He then marched him off to Stazzema. It should be said that the lieutenant thought his attempt at suicide unreal and carefully calculated for effect, to save his reputation from any slur his unresisted arrest might otherwise have cast on it. On the way the old fellow nearly succumbed to the effects of the poison or the cure, and only kept himself up by chanting his own verses to the Venus who was at the bottom of his misfortunes.

We heard him start next morning under escort for Bastia, whence, after a few weeks of seclusion, he might hope to be restored to the sympathy of his family and neighbours.

As to animals other than human, I have little to say. A man may make a butcher of himself in Corsica, as elsewhere, and, I am told, obtain a more varied list of victims than in most places. One Frenchman, whom 'Murray' has condemned to eternal infamy, included in his bag 155 blackbirds

and two foxes! I did not see a *mouflon*, and I believe they are as hard to come at as bears in the Trentino. All the island breeds, horses, sheep, goats, pigs, are small and spare. The horses, however, are good to go, the sheep to eat, and the goats supply a very excellent white cheese.

I saw some very ugly snakes. There are numerous tribes of large ants, which make processions across the roads, which might incite a Japanese artist to design, or Sir John Lubbock to experiment. I think I may, from personal study, say that the Corsican ants have advanced to that stage in which useful information can be transmitted down the line. There are, besides, some scavenger beetles which work very hard at an unsavoury task. One French publisher has a youth climbing uphill outside his books. Would not one of these meritorious insects, trundling before him his well-compacted dirt-ball, form the most appropriate and significant device for the covers of certain French novels of the new realist school? I make a present of the idea to those whom it may concern.

I have nothing to add to what I have already said of the flora, a subject on which I can hardly speak. These broad facts I would call attention to—the existence of *three* forest zones; first, Mediterranean forests, composed of evergreen oaks and cork trees; second, beech and chestnuts; third, pines and firs; and the apparent want of any but the most limited Alpine flora. In the Apennines the flowers of the Alps reappear; in Corsica they are conspicuous by their absence. I can hardly have been too late for the flowers, if there had been any, when the snow was only just melted off the ground. I should like to know the explanation given by botanists of this sad fact, which takes away greatly from the charm of the higher mountains. Is it the long rainlessness of the summer months?

I conclude with one or two remarks on practical matters. The roads throughout the island are excellent, running in all directions through the mountains. A railroad has been commenced from Ajaccio to Bastia; from the commercial point of view it must, I think, prove a failure.

In the principal towns carriages are easy to obtain. The average price for a two-horse carriage is from 20 to 25 francs a day; the horses will not cover more than forty to fifty kilomètres. In the villages it is sometimes difficult to obtain anything on wheels. The country folk either use the public omnibuses, which run all over the island, or ride. Good mules or horses are to be had everywhere for five francs a day, including the guide.

The country inns in most parts of the island are excellent.

They provide clean beds, and the local fare is abundant, wholesome, and good. Sardines, eggs, soup, red trout, a savoury dish of mutton and potatoes, and fruit—cherries or wild strawberries—is an ordinary dinner. The wine of the island is seldom sour, and often delicious. Old wine of the district should be asked for. Prices, except in the towns, are absurdly cheap. François and I dined, wine included, from 1.25 to 3 francs a head.

Joanne's '*Corse*,' now published separately, is by far the best guide-book. It is, as a whole, trustworthy, though not beyond criticism in detail. There are, for instance, serious inaccuracies on the important routes of Cap Corse and the Castagniccia, and the account of the mountain region is inadequate, while in the map carriage roads and mule-tracks are not accurately distinguished.

Murray's '*Corsica*' was originally composed by a visitor, who took all scenery from the Greenwich diner's point of view, as a background to luxurious eating. The account of the island in his new (1880) '*Islands of the Mediterranean*,' is much improved, accurate so far as it goes, and suggestive, but insufficient for the wants of a serious explorer.

Bädeker's note on the island, in his '*Northern Italy*,' hardly calls for comment. It is of small use to the traveller, though it may serve tourists, whose object is not to see, but to 'do.'

THE ECRINS FROM THE SOUTH.* BY HENRY DUHAMEL.

OF all the mountain valleys with which I am acquainted that of the Vénéon is by far the most thoroughly alpine in the grandeur of its scenery; and I think that those who have visited it will be inclined to agree with me. It is shut in on all sides, save that by which the torrent escapes, by an unrivalled barrier of rocky precipices and steeply descending glaciers. Around it rise all the highest summits of the Dauphiné Alps (with the single exception of the Pelvoux), and most of them have been conquered by travellers starting from this valley, which runs up like a wedge into the centre of the district. The inner slope of this horseshoe is far steeper and more rugged than the outer, and yet all these peaks have one after the other been climbed from this side.

* By permission of the author, this paper is adapted and translated from the original, which will appear in the '*Annuaire of the French Alpine Club*.'

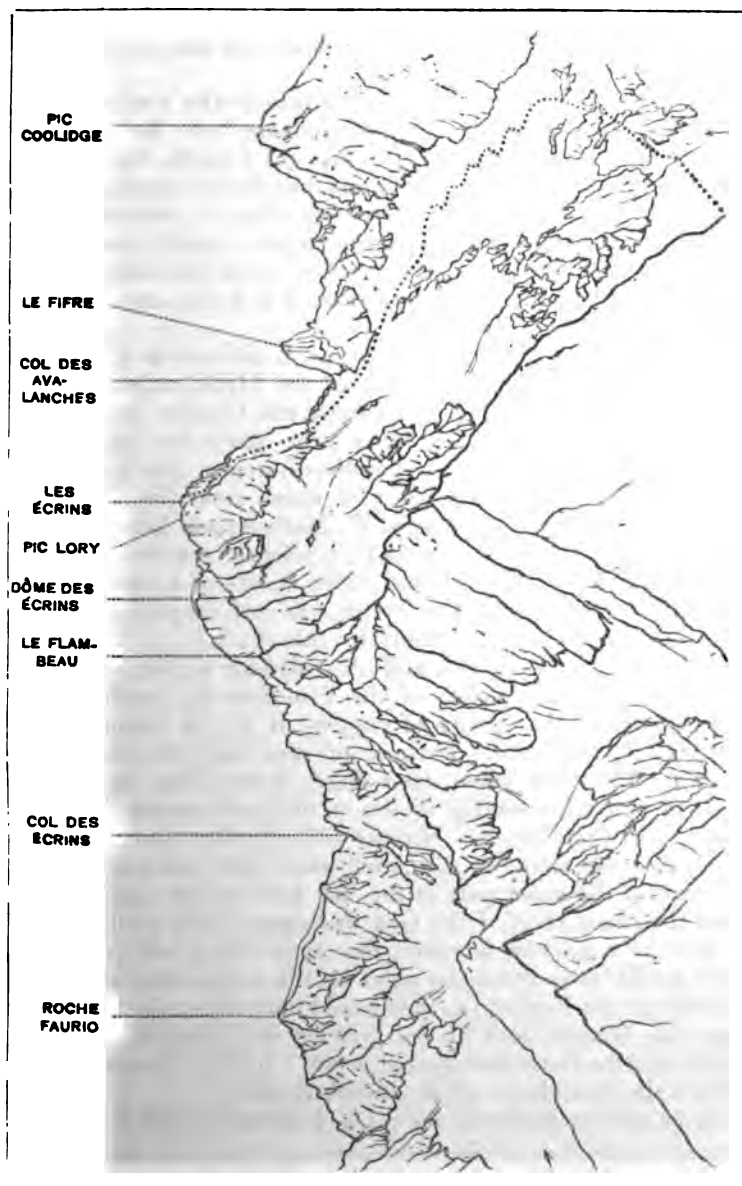
To the Meije (1877), Les Bans (1878), and the Olan (1880) achieved by friends, it fell to my lot last summer to add the Ecrins.

Mr. Whymper's book has familiarised all my readers with the appearance of the Ecrins—the monarch of the group—from the north, and many of us have also marvelled at the terrific precipices in which it soars above the Glacier de la Bonne Pierre on the west. Now, while to the north the peak had been conquered by the great ice slope or by the east and west arêtes, the great rock wall to the south, falling to the Glacier Noir, had hitherto remained unscaled. It was by means of this wall that I succeeded in reaching the summit.

The Ecrins, as everyone knows, rises above the village of La Bérarde, which is situated at the point where the streams from two valleys unite to form the Vénéon. It is not visible from the village itself, and even from the path down the valley towards Les Étages the highest peak is not perceived. Rising behind the sharp tooth of the Flambeau des Ecrins (3,600 mètres=11,812 feet), we see a double pointed summit—the point to the left being the Dôme de Neige des Ecrins, or Pic de la Bérarde (3,980 mètres=12,958 feet), and that to the right the Pic Lory (4,083 mètres=13,396 feet).^{*} The latter is the highest peak of the mountain which is in the department of the Isère (being on the ridge which forms the boundary between the two departments), the culminating point of the Ecrins (4,103 mètres=13,462 feet) being a little further east, and wholly within the department of the Hautes Alpes.

Now, till the summer of 1880 the only route known up this splendid mountain was from the north by the great ice-slope (first taken by Mr. Coolidge in 1870), the very difficult ascent and descent by the east and west arêtes having been practically abandoned since the first ascent in 1864 by Messrs. Moore, H. Walker, and Whymper. The difficulties of this slope vary with the state of the snow and ice, and many parties from 1862 onwards have been driven back from the *bergschrund*, which cuts off the upper part of the peak from the Glacier de l'Encula. Some travellers have been fortunate enough to find the north face coated with hard snow in excellent condition; others have had to cut their way up a steep ice wall with infinite trouble and risk. The twelve or

^{*} This summit has been so named by the Isère Section of the 'C. A. F.' as a mark of respect for its Honorary President, the distinguished geologist, M. Charles Lory, Member of the Institute of France, and Dean of the Faculty of Sciences of Grenoble.



GLACIER DU VALLON

THE ECRINS FROM THE WEST.

GLACIER
DE LA
BONNE
PIERRE

fourteen parties that have hitherto been successful in overcoming these obstacles will bear witness to the truth of my statements.

Now, since even in Dauphiné virgin peaks are becoming extremely rare, and adventurous climbers have had to resort to the discovery of new routes up old friends, the Ecrins could not hope to escape this doom; but its resistance, though brief, was glorious. There were two sides by which it had not been attacked—south-west and south—and it was after a single but formidable attack by each of these had failed that I had the luck of succeeding by means of a combination of the two slopes.

It was on July 21, 1877, that Mons. E. Boileau de Castelnau (a few days before his conquest of the Meije) attempted the ascent by the south-west face from the Glacier du Vallon. He succeeded in reaching by a very steep ice-couloir, exposed for several hours to showers of stones, the unclimbed Dôme de Neige * (the conquest of which from the north had been spurned in 1862 by Messrs. W. Mathews and Bonney, after a repulse on the highest peak †), prudently returning to La Bérarde by the Col des Ecrins. This failure of a party, which shortly after conquered the Meije, was not adapted to induce anyone to make a fresh attempt by this route.

Messrs. P. Guillemin and A. Salvador de Quatrefages, encouraged by their ascent of the Viso from the north a week before, formed the design of capping it by the ascent of the Ecrins from the south. Their attack was made on August 19, 1879. ‡ The route taken was a direct ascent from the Glacier Noir in a north-westerly direction, obliquely across the great south face of the Ecrins. Serious difficulties were encountered, and they were forced to turn back when but a few mètres from the crest of the lower part of the east arête of the peak, not far from the sharp point of the Grande Sagne (Crête de l'Encula). It is to be remarked, however, that even if they had succeeded they would have attained a point on the arête *below* the *bergschrund* of the Ecrins, i.e. they would only have effected a pass from the Glacier Noir to the Glacier de l'Encula, a feat in which they had been anticipated in 1877 by Mr. Coolidge with his Col de l'Encula, or de la Grande Sagne. §

From various points of view I had satisfied myself that the

* 'Bulletin du C. A. F.,' 1877, 301.

† Bonney's 'Sketches in the High Alps of Dauphiné,' p. 20.

‡ 'Annuaire du C. A. F.,' vol. vi. pp. 32-40.

§ 'A. J.' vol. viii. p. 333.

chances of success in an attack on the Ecrins from the south were great enough to justify at least a preliminary exploration, and with this object my guides (the Gaspards) and I started from La Bérarde on the morning of August 25 last. The Vallon de la Pilatte, through which we mounted, though not enjoying so evil a reputation as the Vallon des Etançons (perhaps because it is less known), is being simply choked up year by year by huge blocks from the slopes on either hand, the only level spot being a small plain (the Carrelet) at its junction with the Combe du Chardon, about one hour from La Bérarde. It is covered with short turf and juniper bushes, and is a welcome break in the dreary scene of desolation around. Half an hour beyond we reach a small clump of pine trees clambering up the stony eastern slope of the valley. I have in my possession an autograph unpublished MS. of Villars, the celebrated Dauphiné botanist, who thus describes his excursion to this region in September 1786 :— 'Un phénomène étonnant sont des bois de pin de Genève (*Pinus Silvestris*, L.), qu'on trouve à une demi-lieue au-dessus de la Bérarde autour d'un plateau appelé le Carrelet. Ce plateau est à moitié chemin du glacier [de la Pilatte or de la Condamine]; il y en a un en face, appelé le glacier du Chardon. Le confluent de l'eau de son torrent avec celle des autres glaciers du fond de la gorge ont formé ce plateau presque horizontal qui a un demi-quart de lieue quarrée. Il présente un gazon très lisse, au milieu duquel sont 10 à 12 masures, autant de traces d'anciennes granges, habitables probablement en été, quoique les gens du pays nous aient dit bonnement qu'elles l'étoient avant le déluge seulement ! Le baromètre s'y trouve à 22.6 l., th. 12°, ce qui donne environ 950 toises d'élévation au Carrelet sur le niveau de la mer. Les pins les plus élevés qui tracent une ligne à peu près horizontale autour du plateau sont à la hauteur de 1,164 toises sur le niveau de la mer, puisque le mercure s'y tient à 21.5 l., th. 12° ; élévation prodigieuse, et dont il n'existe surement pas d'exemple dans la province.'* Not far from this clump of trees on the right bank of the torrent du Vallon the Isère section of the C. A. F. hopes to construct, in time for use during the coming summer, a roomy club hut, which will greatly shorten the way to the many peaks and passes at the head of the valley. It will

* English readers will recollect that Mr. Bonney has pointed out the Carrelet as the best site for a little Alpine inn, the view of the Ailefroide from here being very grand ('Sketches,' 33). According to the French map the height of the Carrelet is 1,946 mètres (=6,385 ft.).

correspond to the position of the Chatalleret in the Vallon des Etançons.

Crossing the torrent from the Glacier du Vallon, we followed the Col de la Temple route to the point where it bends away to the right across a rocky face, and made straight running for the Glacier du Vallon, keeping up which we reached the Col des Avalanches or Col du Vallon de la Bérarde* (3,548 mètres = 11,540 feet). During the latter part of the walk we had been in full view of the great south face of the Ecrins, close under which lies the col.

Two routes were now open to us. We might climb the south-west face and reach the ridge between the Dôme de Neige and the Pic Lory—that is, make a variation on M. B. de Castelnau's route. But the rocks seemed rotten and the risk of falling stones very great: besides, this route had been already attempted without success. The alternative was to climb the rocks immediately to the north of the col. In favour of this was the fact that the edges of the rock strata (or, as Gaspard said, 'leur coupe') were turned the right way: the snow at their base showed no marks of falling stones, and there were in the rock face several hollows well adapted to arrest them in their course. This rock wall or ridge is the southern buttress of the Pic Lory, and supports on its eastern flank an irregular mass of snow (christened Glacier des Ecrins, and corresponding in position to the Glacier Carré of the Meije), to gain which was our immediate object. The chief difficulty seemed to be a bit of smooth rock—the Rocher Blanc—which barred the way to the crest of this ridge.

It was after noon when we started from the col: three hours and a half later we were convinced that we had made out the way up the peak. It was too late, however, to make the attempt that day, so we hurried down but were benighted in the moraine of the Glacier du Vallon. The weather had been perfect all day, but it changed in the night and we were unwillingly forced to retreat to La Bérarde.

On the 27th, despite the weather, we set out to explore the Glaciers de la Temple and de la Coste Rouge, which are very badly laid down on the maps. Before reaching the Col de la Coste Rouge (which is exactly where the map has the figures 3,152 mètres) a gleam of sunshine raised a hope that we might make our attempt the next day, and young Gaspard was sent

* 'A. J.' vol. viii. p. 335. Cf. 'The Alps in 1864,' by A. W. Moore, p. 43. Bourcet's old map calls the valley leading up to this valley the Vallon de la Pirade.

back to La Bérarde for provisions. His father and I went on to the col. I then resolved to try to follow the ridge towards the north to the Col de la Temple, which we succeeded in doing in three hours, chiefly by a narrow ledge in the rocks of the eastern side of the ridge. But the clouds had come down again, and when we met Pierre Gaspard in the little pine-wood dense mist enveloped us. Soon came the rain, and fresh snow fell very low on the surrounding slopes.

Our patience was sorely tried by the continuance of similar weather during the next few days. We were unwilling to leave La Bérarde, yet it is not easy to kill time there, especially when kept indoors. Finally, an improvement on September 2 induced us to bivouac in the little pine-wood, since I had no time to lose, being forced to be back at Grenoble on the 5th. We started at 5 A.M. on the 3rd, and, following the same route as on August 25 (save that, not fearing the stones from the Fifre and Pic Coolidge so early in the morning, we kept up the left side of the Glacier du Vallon instead of taking to the rocky ridge which cuts its lower portion into two), were once more on the Col des Avalanches at 7 A.M. After breakfasting comfortably, and leaving everything behind except a bit of bread in each man's pocket, we started at 8.15. Climbing up the great chimney, then crossing to a smaller one on the right, which we mounted for a few steps and then bore to the right, we reached with little difficulty, save some ice-glazed rocks, the only *mauvais pas* of the expedition—the Rocher Blanc. The rock here overhangs its base, and is very smooth, but the ledges are just wide enough to allow the bad bit to be turned, though each man has to shift for himself here, his companions being invisible. The Isère section proposes to place here next July a chain of 30 mètres to facilitate the ascent. Ten minutes more sufficed to reach the crest of the ridge (at 10.30 A.M.), forming the watershed between the two departments, and coming down from the Pic Lory. Then came a narrow snow gully, which falls to the Glacier Noir, 1,400 mètres (= c. 4,600 ft.) below, the most formidable precipice in the district. In this way the little Glacier des Ecrins was gained. Traversing it to the east, to the foot of a great streak or gully of snow, we climbed up this latter and then took to the rocks on the right. At 1.40 we reached the highest ridge of the Ecrins, scarcely 30 feet from the summit.

The wonderful view has been often described, and I shall therefore have compassion on my readers. The great quantity of newly-fallen snow would have made the ascent by the usual

route very dangerous, if not impracticable; and it is one proof of the superiority of our line of march that, notwithstanding this snow, we encountered but one serious obstacle—the Rocher Blanc. I do not think then that it is unreasonable to assume that this new route will become the favourite one up the mountain, especially when the hut has been built below. There does not seem to be any danger at all by this way, a striking contrast to the route from the north. Our success, after the storms of the preceding ten days, is an irresistible argument in favour of the southern route. After nearly an hour's halt on the summit, we regained the Rocher Blanc in two hours, and at 6.40 were satisfying our hunger with the provisions abandoned on the Col des Avalanches. Fifty minutes sufficed to get clear of the glacier, but the long descent in the dark over moraine and stones was very fatiguing, and right glad were we to find ourselves once more at La Bérarde at 10.30 P.M. The weather broke next day, and the storms resumed their course. We had been fortunate enough to hit on the least unfavourable day of the end of the Alpine season of 1880 for our expedition, which I hope will be often repeated by my colleagues.

NOTE ON AN ALLEGED ASCENT OF CHIMBORAZO IN 1856.

To the Editor of the Alpine Journal.

Sir,—Before my departure for Ecuador in 1879, my attention was frequently directed by friends and others to a reputed ascent of Chimborazo by Messrs. Remy and Brenchley. I first noticed mention of it in the English translation of the 'Life of Humboldt' edited by Bruhns, published in 1873. In a note at p. 315 of vol. i., it is said Chimborazo has since (the time of Humboldt) been ascended 'by Jules Remy and Brenchley to the height of 21,457 feet, on November 3, 1856. The height of the mountain is, according to Humboldt, 21,460 feet.' To the casual reader this notice would make it appear that Messrs. Remy and Brenchley had arrived within three feet of the summit.

In the preface to the book by Mr. Brenchley entitled 'Jottings during the cruise of H.M.S. "Curaçoa,"' also published in 1873, it is stated at p. xiii. that they (that is to say, Messrs. Remy and Brenchley) 'went to Panama and Ecuador, and ascended Pichincha, down the crater of which Mr. Brenchley, having slipped in his descent, was carried to a formidable depth, from which, with the utmost difficulty, by sheer determination and strength, he finally succeeded in regaining the summit. The next excursion was up Chimborazo; after which they visited Peru,' etc.

It will be noticed that in neither of these extracts is it expressly

stated that Messrs. Remy and Brenchley reached the summit of Chimborazo, but the statements are made in such a way that the inference is natural, and the inference was drawn by many persons; and subsequently it was frequently stated as a fact that Messrs. Remy and Brenchley had ascended the mountain. Amongst those who were best acquainted with South American matters, I ascertained, however, that no credence was placed in this exploit. Finding that Mr. Brenchley was dead, and being unable to learn anything about M. Remy, I accordingly let the matter drop.

Since my return from Ecuador several persons have written to me again upon the same subject, some of whom have stated roundly that Messrs. Remy and Brenchley reached the summit of Chimborazo in 1856. M. Remy also, it is found, is still alive, and he has communicated some details through his friends; but as these details were not of a satisfying nature * I was led to pursue the subject, and eventually found, through the kindness of the Librarian to the Royal Geographical Society, that an account of the journey of Messrs. Remy and Brenchley had been published in Hooker's 'Journal of Botany and Kew Gardens Miscellany,' vol. ix., 1857, pp. 143-48. As this volume is out of print, and is not easy to procure, I venture to think that your readers will be interested in a reprint of the account. It is headed—

ASCENT OF CHIMBORAZO, BY M. JULES REMY, A FRENCHMAN, AND HIS TRAVELLING COMPANION, AN ENGLISHMAN, MR. BRENCHLEY.

[The following interesting account of the ascent of Chimborazo, by two gentlemen, one of whom, M. Jules Remy, distinguished himself previously by his travels in California, is extracted from a communication, for which we are indebted to Alexander G. Taylor Esq., of Monterey.—ED.]

On the 23rd of June, 1802, the most distinguished of modern travellers, the illustrious Humboldt, accompanied by Bonpland, attempted the first ascent of Chimborazo. A peaked rock, which presented an insurmountable obstacle, forbade their progress higher than 5,900 mètres (19,357 feet) on this mountain, which was then reputed as the loftiest of the world, and which still holds the first rank among the giants of the Andes. Thirty years after, December 15, 1831, M. Boussingault, who had long and scientifically explored the equatorial Cordilleras, undertook the ascent which had baffled his predecessor, proceeding by Chillapullu, which appeared to be the easier, though somewhat longer, route; but being frustrated in this direction, he made a second attempt by Humboldt's route, the Arenal. He thus attained the prodigious elevation of 6,004 mètres, that is, 19,700 feet, beyond his predecessors; but, like them, he was arrested by impassable rocks.

Now it is no wonder that we lost all hope of reaching as great a height as these famous travellers; but having carefully scanned the rounded and snowy summit from Guayaquil, we could not relinquish the idea that it might yet be found accessible; and a third attempt to reach the top of Chimborazo was fixed upon therefore by Mr. Brenchley and myself.

On the 21st of July, 1856, when traversing the plateau of the Andes towards

* 'We never did publish anything on our ascent of Chimborazo. At the time, it is true, I wrote from Guaranda to a friend in Guayaquil a letter on the subject, and it is that letter, arranged and enlarged by the said friend, which appeared in the papers of America, and thence in the papers of Europe. I regret to have preserved none of those papers.'—Extract from a letter by M. Remy.

Quito, we halted at the foot of the stupendous mountain. Two days were devoted by us to studying its outline and general features, with the telescope, and to scanning every point and elevation and depression on the gigantic dome, which promised to favour our upward way. The course adopted by Humboldt and Boussingault struck us from the first as the most practicable, till arriving at the rocky barrier, quite perceptible from below, through which no issue could be descried. After we had carefully made the almost entire circuit of the colossus, we turned our steps to Quito, deferring the attempt till we should have hardened ourselves to bear the severe climate of the lofty Cordillera. We visited Pichincha, Cotopaxi, and several other giants of the Andes, and on the 2nd of November we were once more at the foot of Chimborazo, and encamped at an absolute height of 4,700 metres (15,420 feet), rather below the level of perpetual snow, in a valley situated between the Arenal and the point where the Riobamba road divides from that to Quito. We determined to spend the day in botanizing, and in shooting deer and birds; while we should be endeavouring to decide on the track which promised easiest access to the top. We fixed ourselves in the evening under a large, sloping rock, which sheltered us from the north-east wind, but afforded no cover from wet, if the rain, which had fallen in the afternoon, should come on again. The weather cleared as night approached, and we had splendid views of the starry heavens, against which the mountain came off in strong and sharp relief, while a gurgling, subterranean stream sounded pleasantly in our ears.

At five in the morning, when it is hardly day in equinoctial regions, we left our camping place, and started, carrying lights, two thermometers, a compass, a coffee-pot, and tobacco. The summit of Chimborazo, before us, was bearing north-east, and the Inga-Pirca stretched like a wall behind us. A steep hill, which lay between us and the perpetual snows, proved so fatiguing of ascent, with its sharp, bristling rocks, that the two natives were discouraged, and turned back again. After climbing this hill, we descended to the moist sand of a valley, which we threaded, and on emerging from it, we had the satisfaction to see the mountain-top quite free from clouds. By six o'clock we had reached the snows and found great interest in watching the conflicts of the humming-birds, which attacked each other with their tiny beaks and buzzing wings; and no less to see a quantity of plants in flower among the eternal frosts. We noticed several *Compositæ*, and a Caryophyllaceous species: among the former were a *Culottium* and a *Chuquiragua*, a dwarf *Umbellifera* (*Oreomyrrhis*), two kinds of Violet with tufted foliage, a starry Crucifer, and a low-growing gentian, with large red flowers. We were disappointed of finding *Saxifraga Boussingaultii* (of Brongniart), a plant of particular geographical interest, because it is considered to inhabit loftier spots than any known Phenogamous species.

After half an hour's walk across the snow, vegetation suddenly disappeared, and no living thing was to be seen save two large partridges, while the rocks were speckled with a few Lichens of the *Idiothalami* and *Hymenothalami* families. At this point we stopped to collect and make a fagot, which we carried on the back, of the dead branches of the *Chuquiragua*; still we had to escalate an immense rock of trachyte, from the top of which the summit of Chimborazo looked so close to us, that we thought it could certainly be reached in half an hour. Again we came upon snow, increasingly solid, in which our feet did not sink above two inches, which proved a great assistance to us in pursuing our course up the steep incline which we were obliged to pursue, and which was so abrupt that we could not but wonder at the perpendicular distance which each step involved. No obstacle threatened to arrest us: bending sometimes a little to right, and then to left, and then making straight for the summit, we gaily pursued our way. Towards the left there certainly rose a steep escarpment of sheer, glassy ice, but as this was visible from a considerable distance, we avoided it without loss of time. Our feet and hands were bitterly cold, and we were compelled to halt now and then to get our breath, and occasionally even to sit down for a few minutes, after which we

started again with new ardour. None of the peculiar sensations of sickness, distress, acute head-ache, and palpitations, which travellers generally experience upon lofty elevations, were felt by us; the atmospheric column was still sufficient for easy respiration, and we could not but conclude that some cause, independent of height, must be the reason for the morbid symptoms in question. It must be confessed that during the first few days of our residence at Quito we were troubled, like all new comers, with shortness of breath, but (which is a most remarkable circumstance) we lost this symptom when ascending the crater of Pichincha, which is a thousand toises (6,000 feet) above the level of Quito. Perhaps the sudden changes of climate, and the fatigue inherent to mountain expeditions, have more to do with producing these discomforts than any state of atmosphere at lofty heights. Thirst we certainly experienced, and we constantly kept lumps of snow in our mouths to slake it.

Our rapid ascent had already enabled us to look above the peaks of the Cordilleras, and to descry a distance, furrowed with deep and extensive valleys, when filmy vapours, at first no thicker than spiders' webs, and clinging to the sides of the mountains, began to float away in the form of white fleeces, and, gradually collecting, to obscure from view the horizon. Suddenly, about eight o'clock, this curtain dilated, swept towards the base of Chimborazo, and in a few minutes reached the spot we had attained, becoming always denser, till it hid the summit from our eyes. Still we persisted in climbing, attracted by the hope of attaining the top, the fog thickening, till we could not see twenty steps before us; and at half-past nine it was almost dark. As we however felt secure of being able to accomplish our return by retracing our own footsteps, we summoned new perseverance to our aid, and kept constantly referring to the compass, in order to avoid a precipice which we had formerly sighted. Yet a little higher and further, and then we became sensible that the elevation was less steep, that we walked more easily, and could breathe with greater freedom, when, at intervals, hollow detonations were heard. At first we attributed them to explosions of Cotopaxi, but presently brilliant lightning announced the raging of a storm far below us—a storm such as only equatorial regions ever know. Under the fearful impression that hail or snow would efface the print of our steps, and thus make us lose our way (and perhaps our lives) in the attempt to descend, we decided, though regretfully, to halt; and kindling our *Chuguiragua* wood, we began to melt some snow in our coffee-pot. At ten o'clock the thermometer, which indicated 1.7° at five feet above the snow, was immersed in boiling water, where the mercury rose to 77.5° . Our observations finished, we began to descend at a giant's pace, to regain our encampment, which we reached, in the midst of a thick fog, at about one in the afternoon. The thunder rolled without intermission, and vivid lightning-flashes, sharply defined, as we only see them in pictures, played incessantly around us till about three o'clock; an awful tempest of hail, rain, snow, and wind, rushed down upon us and our imperfectly sheltering rock, and never gave over till past midnight. We lay in a bed of water; and when daylight came we could perceive nothing but wide tracts of hail and snow, with such signs of a fresh tempest as compelled us to relinquish the thought of making another trial for the summit of Chimborazo, which we had however satisfied ourselves to be within the bounds of practicability; so we struck our tent, and hastened back to Guaranda, where we arrived late in the afternoon, the thick fog having all along intercepted the grand prospect which we longed to behold.

When we had calculated our observations, we made the unexpected and gratifying discovery that we had stood on the summit of Chimborazo, without being aware of it. From calculations and researches pursued in the Archipelago of Hawaii, and repeated upon the Cordilleras of the Equator, we had ascertained that the boiling-water point indicates a difference of 29 mètres (95.146 feet) for the tenth of a degree, from which it results that, when we boiled our kettle, we had attained an elevation of 6,543 mètres (21,466 feet)

of perpendicular height upon Chimborazo, to which mountain Humboldt assigns an elevation of 6,544 metres (21,469 feet).

Whether our calculation be accepted as positive and undeniably correct or not, we at least ascertained the fact that the summit of Chimborazo is not inaccessible.

JULES REMY.

Towards the latter part of the foregoing narrative it will be seen that there is something very like a positive claim to have stood on the summit of Chimborazo, and this claim is based upon the reading of a thermometer *immersed* in boiling water, which indicated a temperature of 77·5° C., with an air temperature of 1·7°. The altitude deduced from this observation, M. Remy states, agreed very well with the altitude given by Humboldt. He makes it, in fact, come within *three feet*.* I cannot pretend to follow M. Remy in his calculation; for, according to the tables in common use, and according to my own observations at great altitudes, a temperature of 77·5° C. would indicate, not a height of 21,466 feet, but a height *exceeding* 24,000 feet. There is therefore no agreement with the Humboldt determination.† But the thermometer employed, it is admitted in the letters from M. Remy, was faulty. In a letter dated December 20, 1880, he says, 'we never thought much of our ascension, as it was useless to science, our observations having been too hastily made, and having discovered too late that the thermometer we had put in boiling water was not correct.' He does not say in what way it gave incorrect readings, but this is a matter of little moment, as any deductions for altitude are worthless which may be made from readings of thermometers *immersed* in boiling water.

After an examination of the narrative in Hooker's Journal, and from the data which have been communicated, I feel convinced that Messrs. Remy and Brenchley did not arrive within *some thousands of feet* of the summit of Chimborazo. I need only refer to the *times* quoted by M. Remy. He camped, it is stated, at the height of 15,420 feet, and he assigns the height of 21,466 feet to the mountain. The difference of level is therefore 6,046 feet. Starting from the lower station at 5 A.M., they are presumed to have reached the higher one at about 9.45 A.M. It is to be remarked that they had spent time in watching the conflicts of humming-birds; had been noting the vegetation; had stopped to collect wood for and to make a faggot; had occasionally to sit down to regain breath; and kept constantly referring to the compass. They could not therefore have been actually going for more than 4½ hours, and during this time are presumed to have ascended 6,046 feet, over entirely unknown ground, which was soft sand, snow, ice, and broken rocks. If they did so they performed an unparalleled feat, for their rate of progress must have been about double that of the most

* It will be noticed that these heights differ from those quoted already from Bruhn's life of Humboldt. It is needless to attempt to reconcile the discrepancies, as they do not affect the argument.

† My own observations with mercurial barometer for the height of Chimborazo have been carefully calculated by Mr. W. Ellis of Greenwich Observatory, and make it 20,517 feet, or more than 900 feet lower than the height given by Humboldt.

practised and fastest amateur or professional mountaineers. They commenced to descend about 10.15 A.M., and arrived at their camp at about 1 P.M., which is again an extraordinary rate for a descent on the upper part of a great mountain.

If it is considered further that this is presumed to have been accomplished between the heights of 15,000 and 21,000 feet above the level of the sea, at which altitudes the bodily powers are much diminished, it will be seen that the presumed feat can only be regarded as an absolute impossibility. From the data supplied, I cannot pretend to determine what was the height actually reached by Messrs. Remy and Branchley, but I feel convinced, as I have already stated, that the point they reached, wherever it may have been, was some thousands of feet from the summit.—I am, Sir, your obedient servant,

EDWARD WHYMPER.

IN MEMORIAM.

R. P. JACKSON.

A familiar face is lost to us: a familiar voice is stilled. Each year as we visit the Alps we make new friends and acquaintances: friendships which vanish for the most part as the journey ends and acquaintances seldom renewed. A pity this: for it is often when men are among new conditions of life that their characters may best be gauged. There are, however, many members of our Club between whom and the subject of this notice no such transient feeling of friendship and attachment was called into existence. Beneath his hospitable roof, how many fellow-travellers have not met? how many Alpine projects have been mooted? how many successes talked over? how many failures laughed over? In the playground that we have made our own by right of conquest, he was one of the most energetic. His knowledge of the high Alps was varied and extensive. The glaciers are melting away, the rock peaks crumble. The hand of change and death is everywhere: yet none the less did it seem to be laid cruelly and heavily when it took from us a cheery unselfish friend, an ardent mountaineer, and a genial companion in Edward Patten Jackson. He died on January 17 at Wynberg, Cape of Good Hope.

C. T. D.

ADOLPHE JOANNE.

We regret sincerely to have to announce the death of one of the most distinguished of the Honorary Members of the Club—Monsieur Adolphe Joanne, late President of the French Alpine Club. The loss which the Alpine Club suffers by his decease is exceeded only by the loss suffered by the Club of which he was the principal founder. Though his name is well known to all who are interested in the Alps, few of us had the privilege of his personal acquaintance: yet those who knew him, were it but slightly, will feel their loss more keenly than those who were not so honoured.

A brief sketch of his life (for many of the facts in which we are

indebted to the courtesy of the Secretary of the French Club, himself one of Monsieur Joanne's most intimate friends) will best show the wide sphere in which his restless activity displayed itself. Born at Dijon on September 15, 1813, he came to Paris in 1827, and completed his education at the Lycée Charlemagne. Having determined on adopting the honourable profession of the law, he was called to the Paris Bar in 1836; but he soon devoted himself to literary pursuits, and contributed many articles and translations to '*Le Droit*,' '*Le National*,' the '*Revue Britannique*,' the '*Gazette des Tribunaux*,' and the '*Journal de l'Instruction primaire*.' In 1843, with MM. Paulin and Charton, he started '*L'Illustration*.' Monsieur Joanne combined in himself the characters of Mr. Ball and Mr. Murray. Having begun by publishing the notes of his own journeys, he was later led to greatly enlarge his scheme and to become the sponsor of a small library of guidebooks. His excursions to Switzerland, Scotland, Germany, etc., had begun as early as 1834; and the experiences thus gained were published in the shape of the earlier volumes of the collection which bears his name. The '*Itinéraire en Suisse*' appeared first in 1845, those for North and South Germany in 1851, and gradually the collection came to include, not only all the chief European countries, but Egypt and the East, and numbers 120 volumes. In 1866 the series of '*Guides Diamant*' was begun. The volumes originally published as '*Itinéraires des chemins de fer français*' were gradually transformed into the eleven volumes of the '*Itinéraire général de la France*,' and it is by two volumes of this set—the '*Jura et Alpes Françaises*' (1877) and the '*Provence, Alpes Maritimes, Corse*' (1877)—together with the Swiss Handbook, that Monsieur Joanne's name will be gratefully remembered by all alpine explorers. It may be permitted to one who has had ample opportunities of judging to bear witness to the unvarying accuracy and wonderful extent of the knowledge compressed in the two works concerned with the French Alps. They may be said to have revealed to many the very fact of the existence of mountains in France other than Mont Blanc. But we are far from having exhausted the list of works of which he was the author, compiler and translator. Suffice to name, among the former, the '*Dictionnaire des Communes de France*' (1864, revised edition 1869), and the excellent and handy '*Géographies départementales*,' some of which were lately noticed in these pages; and among the latter, Macaulay's *Essays*, Whymper's '*Scrambles*,' Mrs. Stowe's '*Uncle Tom's Cabin*,' and the novels of Dickens.

For these praiseworthy attempts to make known his own country he received, among other testimonies of gratitude, a medal from the French Archæological Society and another from the French Geographical Society.

But while devoting his life to the description, under every aspect, of his native country, there was one part of the subject which was specially near his heart. The sight of the hordes of tourists which he had had a share in attracting to the mountains of Switzerland excited in him a desire to divert some of them towards the French mountains. And it was with this object that his idea of a French Alpine Club on the model of the similar societies in other European countries, sketched

out before the terrible war of 1870, was finally carried out on April 2, 1874. Monsieur Joanne contented himself with the modest post of second Vice-President, but was in reality the soul of the movement, the rapid success of which was startling even in these days of haste and hurry. After the successive deaths of the first two Presidents of the Club, Monsieur de Billy (1874) and Monsieur E. Cézanne (1876), Monsieur Joanne was unanimously elected to the vacant office on June 21, 1876. This is not the place to describe the energetic way in which he managed the affairs of the youngest of the Alpine Clubs of Europe; but we may recall the exquisite courtesy with which the representatives of our Club were received by him on the occasion of the International Congress of Alpine Clubs at Paris in September 1878. He was then already suffering from the cruel malady which was to prove fatal to him, and in May 1879 felt himself obliged to resign the office which he had filled with so much credit and dignity, being named Honorary President. His physical forces gradually failed, but his interest in the Club was unabated. He sank to rest on March 1, in his 68th year; and was buried on the 3rd at the Montparnasse Cemetery, his successor in the Presidency, Monsieur Xavier Blanc, delivering an eloquent and affecting discourse at the graveside.

The man is gone: but he has left behind him a memory which cannot be effaced so long as there still are found lovers and admirers of mountain scenery.

NEW EXPEDITIONS—(*continued*).

Mont Blanc District.

AIGUILLE D'ARGENTIÈRE (3,901 metres = 12,799 feet), August 14, 1880.—Messrs. L. Dècle and J. A. Hutchison, with Abraham Jungseng and a Courmayeur guide, having ascended this peak by Mr. Reilly's route* (but having climbed bad rocks to the right of the great ice-slope, in order to avoid the great bergschrund), effected a direct descent down the S. face to the Glacier d'Argentière. This lay over steep and difficult rocks, then covered with snow, and then down an extremely steep ice-slope exposed to avalanches; four hours were consumed in reaching the glacier from the summit of the peak. This descent, however, was found less difficult than the route taken in the ascent.

An attempt made (August 16) by the same party to reach the *Aiguille de Chardonnet* from the *Col du Chardonnet* failed, after two-thirds of the great couloir had been climbed, owing to avalanches, and the impracticable character of the rocks on either side of the couloir.

* *Alpine Journal*, vol. ii. p. 109.

REVIEWS AND NOTICES.

Die Lawinen der Schweizeralpen. Von J. Coaz, Eidgenössischer Oberforstinspektor. (Bern: Dalp. Price 7 francs 50 centimes.)

This book claims to be the first separate treatise on avalanches which has ever been published, and the author is well qualified to deal with it owing to his long service on the Federal Survey and as an official of the Federal Department of Woods and Forests. And yet it has very much disappointed us, though perhaps unreasonably. It is concerned with avalanches, mainly in their relation to the damage they cause in the valleys into which they fall, and with the means of averting or remedying such damage; but the strictly alpine aspect is scarcely touched on at all, though Herr Coaz, the first conqueror of the Piz Bernina and many other peaks in the Graubünden, was well qualified to deal with it. Hence the book belongs rather to the class of works for professional engineers than to that of alpine books properly speaking.

Commencing with a general description of the atmospheric conditions favourable to the production of avalanches, which strikes us as somewhat inadequate, though illustrated by valuable tables, the author classifies these well-known phenomena of nature thus:—

(1) Grundlawinen—where a great mass of snow gradually slides down a slope till it falls over a precipice, occurring chiefly in warm wet weather.

(2) Gletscherlawinen—where fragments of a glacier break off and fall.

(3) Staublawinen—where the snow is powdery, occurring specially in very cold weather.

His remarks on the influence of the geological nature of the ground in causing avalanches are good, as also his detailed description of 'Lawinenkegel,' or cones formed by the debris of avalanches, and the various phenomena they exhibit. A very curious document, dated 1397, as to the Bannwald (a wood spared in order to be a protection against avalanches) near Andermatt (p. 34), is worth noting, as a unique specimen of its kind.

The historical account of avalanches is far from being satisfactory, though many curious details may be found (pp. 57-108), e.g., the description of a great avalanche in 1867 near Schleins in the Lower Engadine, which was 3,900 mètres broad, and fell 1,000 mètres, and seems to be the largest avalanche which has as yet been measured. It is a good idea to select a district, as Herr Coaz has done, in order to get some idea of the number and size of permanent avalanche gullies, even though he allows that the St. Gothard region, which he has chosen, is exceptionally rich (if we may use the term) in such terrible phenomena. On the excellent map appended we find no less than 273 such gullies in the district comprised between the Devil's Bridge and the slopes of the Furca pass. Many of the old stories of persons killed by or rescued from avalanches are given, though we do not recollect having before heard of the prudent man of the Muottathal (Schwyz) who scolded his children when they slammed the doors in weather favourable to the downfall of avalanches. Some

of the remedies suggested for restoring animation savour, however, of the dark ages.

The author gives us some very interesting details as to the means—earthworks, heaps of stones, stone walls, wooden piles, and 'schnee-brücken' (dykes or dams)—which have been found best for preventing or checking the violence of avalanches, though we are surprised to learn that the first case in which such artificial means were scientifically employed is not earlier than 1867 (p. 108). It would have been better to omit altogether the last chapter on the occurrence of avalanches in other countries. As it stands it is ludicrously inadequate. The Abruzzi are not even mentioned, though we believe avalanches are not unknown on the Gran Sasso; the Savoy, Dauphiné, Cottian, and Maritime Alps are dismissed in a few lines, and we have been unable to discover any allusion to the Italian Alps (except the Apennines), though we imagine that they would claim a high rank, if the various ranges were classified in respect to the number and mass of avalanches of which they have been and are the silent spectators.

As a whole, we repeat, this book has greatly disappointed us, though it contains many valuable facts: it is sadly lacking in some portions, and ill-arranged in others. Yet we would not leave our readers under the impression that it is a worthless book; on the contrary, they should buy and study it, and they cannot fail to derive both amusement and instruction from it. The numerous tables, illustrations, and sections which it contains, add greatly to its value; though for an absolutely correct representation of an avalanche, in its appearance after its fall and its effects, we would refer to several admirable photographs (the first of their kind ever taken) placed at the end of the volume published by the Barcelonnette section of the French Alpine Club, which is to be found in the Club Library.

Turkish Armenia and Eastern Asia Minor. By the Rev. H. F. Tozer, M.A., F.R.G.S., Tutor, late Fellow, of Exeter College, Oxford. (Longmans. Price 16s.)

Our readers will not have forgotten the interesting account of the ascent of Mount Argæus lately given in these pages by Mr. Tozer, and which is substantially reprinted in the handsome volume before us. Mr. Tozer had in previous years scaled many of the classical peaks in northern Greece, and his narrative of his wanderings in 1879 in Pontus, Cappadocia, and Armenia may fitly be noticed in these pages, since they were mainly among the highlands and minor ranges of Asiatic Turkey, which on an average are from 4,000 to 7,000 feet in height, and rise to 13,150 feet in Argæus, and to 12,000 in Mount Sipan, both isolated peaks. Mr. Tozer's party did not attempt the ascent of Ararat (17,000 feet) in the main range, from want of time and the unfavourable state of the weather.

We are strongly tempted to linger over the excellent descriptions of the various passes traversed, notably over the Anti-Taurus range between Asia Minor and Armenia (6,000 feet), that between Kurdistan and Armenia (5,650 feet), and the Delibaba, leading along (p. 379) the western side of Ararat to the sources of the Araxes and ultimately to

Erzeroum, both the latter having been probably crossed by Xenophon in the famous Retreat of the Ten Thousand. Again, the explorations made by Mr. Tozer and his companion in the neighbourhood of the sources of the Tigris and Euphrates, which resulted in the confirmation of the opinion of Strabo and Pliny, that there is a connection at their sources between the eastern branches of the Tigris and of the Euphrates, and the detailed descriptions of the wonderful Hittite antiquities at Euyuk, of the not less marvellous rock dwellings in the valley of Gueremeh (at the foot of Argæus), of the undeciphered cuneiform inscriptions at Van, all deserve attention. But the merits of the book have met with general recognition elsewhere, and we must confine ourselves to those points which specially appeal to the readers of the *Journal*—the ascents of Argæus and Sipan.

Many will be interested to hear that the curious rock dwellings found by Mr. Tozer on the summit of Argæus are characteristic of the surrounding region, and a capital illustration is given of those at Gueremeh, as well as of the fine porphyritic pinnacles of the mountain itself. Argæus, however, is now comparatively well-known to us compared with Mr. Tozer's other conquest—Mount Sipan, a volcanic peak, which rises on the northern shore of the Lake of Van in Armenia 7,000 feet above the lake, which is itself (though its area is twice that of the Lake of Geneva) 5,000 feet high. The two Englishmen with a native as guide started on September 1 from a little village, Norahunjuk, which lies in a pasture valley, and is nearly 7,000 feet high, thus surpassing by several hundred feet the altitude of the highest village in Europe—Saint Vêran, near the Monte Viso (6,592 feet). The ascent lay over the stony western slopes, and was *pénible* though not really difficult; on the way traces of a bear were found, and many quails and partridges put up. In $4\frac{1}{2}$ hours from the start the rim of the great crater was reached. This was $\frac{3}{4}$ mile wide, and 500 feet deep, the bottom being partly occupied by a lake which was fed by a stream flowing from vast masses of snow, in the upper part of which was a crevasse full of water, which gave the snow-field the appearance of a glacier. Opposite rose a line of small peaks, joined to a broad towerlike mass of rocks, crowned with pinnacles, by a line of cliffs covered with much talus, beyond which a great snow-field falls away to the north. Mr. Tozer, not feeling well owing to the hardships he had been undergoing, allowed his companions to go on to the first named of these ranges, which was reached in an hour more. It turned out, however, that the other or eastern group contained the highest summit, which apparently has been reached only by Mr. Brant's party by way of the south face.* Mr. Tozer describes the view, though obscured by mist, as very fine, including besides the vast expanse of the lake, the mountains of Kurdistan, and in the extreme distance the blue peaks of the country of the Nestorian Christians; but the magnificent view of Ararat was to be had only from the higher summit reached by his friend, though at a subsequent period of the journey Mr. Tozer was fortunate enough to see it in all its grandeur from the west. The height of Sipan has been

* *Journal of the Royal Geographical Society*, vol. x. p. 409.

estimated at from 10,000 to 12,000 feet: Mr. Tozer prefers the latter figure. It is not granted to many members of the Club to extend their summer rambles to Armenia; but we can all enjoy and be thankful for the capital descriptions of the three great peaks of Asia Minor and Armenia—Ararat, Argæus, and Sipan—which we owe to the skilful pens and exploring zeal of Mr. Tozer and Professor Bryce, who will, we are sure, meet with their well-deserved meed of praise from all lovers of mountains. May it be our good fortune to record some day in these pages the conquest of the absolutely unknown ranges of China and Africa, not to speak of the even loftier peaks of the Himalayas!

ALPINE NOTES.

THE ALPS OF NEW ZEALAND.—The following paragraph appeared lately in the 'Academy,' which derived its information from a passage in a letter of the Wellington, N.Z., correspondent of 'The Colonies and India' (S. W. Silver: London). 'We hear that during next year a party of members of the Alpine Club are expected to explore the Southern Alps in the Canterbury province, New Zealand. Some of the mountains in the colony attain a considerable height, Mount Cook, the loftiest, which has never yet been scaled, having, it is said, an elevation of between 13,000 and 14,000 feet.' We may remind our readers that in 1873 the Governor of New Zealand, Sir G. F. Bowen, in a despatch to the Earl of Kimberley, Secretary of State for the Colonies, promised official aid to any exploration of the alpine ranges of his province undertaken by members of the Club.* We believe that the New Zealand Alps are the most extensive and loftiest snow-clad mass of mountains lying *entirely* within the boundaries of the British empire. We trust that we may soon have to record the annexation of this district to the domain of the Club, and that Mr. Whympers brilliant example may be followed by an ever-increasing number of our members.

ITALIAN ALPINE CLUB.—The annual congress of this Club will be held this year at Milan, from August 29 to September 2 (both days inclusive), at the same time as the National Exhibition. Programmes of the lectures, excursions, &c., will shortly be issued. Members of the Alpine Club are cordially invited to take part in this gathering.

At a general meeting of the delegates of the different sections of this Club on January 9, it was decided to present Antoine and Louis Carrel, of Val Tournanche, with special certificates of honour, as a mark of appreciation, on the part of the Club, of their faithful services and magnificent achievements during Mr. Whympers recent explorations in the Andes.

THE HUT QUESTION.—Up to the present time the general rule as to huts built by the French, Dauphiné, Swiss, and Italian Clubs has been that no charge is made for their use, the opposite practice prevailing in the case of those built by the German Club. The 'Alpen-Club Oes-

* *Alpine Journal*, vol. vi. p. 365.

terreich' has recently decided on the adoption of a middle course; no charge will be made for the use of its huts, but it binds itself to provide firewood in each, for which a moderate fixed sum will be asked. This plan would seem to offer special advantages to travellers arriving late at night, or those not wishing to descend into the lower valleys between two expeditions. Enthusiastic 'peak-hunters' should agitate for the adoption of a similar regulation in the case of their particular districts, which will do away with one of the chief obstacles to an unbroken series of ascents.

MILITARY MOUNTAINEERING.—Everyone has heard of the Alpine achievements of Hannibal and Francis I., of Suwaroff and of Napoleon; but these have been recently thrown into the shade by the deeds of a detachment of the 27th (Styrian) Austrian regiment of the line, which last August crossed the Bocca di Brenta fully armed and equipped. Eight officers and 160 men took part in this novel species of mountaineering. Having reached Molveno from Trent by the Monte Gazza, they next day faced the perils of the Bocca, and even ventured to glissade down the snow-slope on the Pinzolo side of the pass. The march from Molveno to Pinzolo occupied 14 hours, including 2½ hours halts. Any traveller who has been in the French or Italian Alps will recollect having heard rumours of the presence of the 'Alpine companies' on the neighbouring hills; but the passage by a small army of a col, not in itself difficult, but distinctly above the snow-line, deserves to be specially mentioned.

THE ALPS IN MARCH.—The higher peaks of the Alps have hitherto not been reached in early spring,* though at every other season of the year they have often been visited. This charm has, however, been broken by Herren Emil Walker of Meyringen and Nägeli of the Grimsel, who (guided by Melchior Anderegg and Hans and Melchior von Bergen), on March 17, ascended the Wetterhorn, starting from the Dörsenhütte at the head of the Urbachthal; they reached the summit of the *Hasli Jungfrau* in 4 hours, at 5.30 A.M., in time to witness the sunrise. The cold was intense. The party returned to Hof early in the afternoon.

MISCELLANEA.—We are informed by Mr. Whymper that specimen slides of the microscopic ash from Cotopaxi, which fell upon Chimborazo (65 miles distant) at the time of his second ascent of that peak, can be obtained from Messrs. Beck, 31 Cornhill, &c.

Mr. F. C. Grove's 'The Frosty Caucasus' has appeared at Paris (Quantin) in a French translation by Monsieur Jules Leclercq, himself the author of a book of travels amongst the Dolomites.

Signor L. Vaccarone (whose valuable paper on the Passes of the Alps in Olden Times was noticed in the last number of this journal, and has received recognition from the authorities of the Italian Archive Office), is about to publish (with Casanova of Turin) a work in French to elucidate the history of the tunnel of the Col de la Traversette, near the foot of Monte Viso. This gallery is known to have been pierced

* Mr. Freshfield, however, went up the Vignemale in the Pyrenees in April. 'A. J.' vol. vii. p. 48.

at the end of the fifteenth century; but, despite the writings of M. Albert, many points are still wrapped in obscurity, which will doubtless be dispelled by the work we announce, as Signor Vaccarone has special facilities for examining the archives at Turin. The book will appear in an *édition de luxe*, of which 300 copies only will be struck off.

Signor Giuseppe Berardo, of Savigliano, has recently published six large and excellent photographs of the scenery at the head of the valley of the Po, chiefly views of Monte Viso, the most striking of which is entitled 'Monte Viso e Lago Superiore.' There is also a useful small panorama of the Viso group as seen from Ghincia Pastour.

PROCEEDINGS OF THE ALPINE CLUB.

A General Meeting was held on February 1, 1881 (by kind permission of the Managers of the Royal Institution) in the Theatre of the Royal Institution, Albemarle Street, when a very large audience of members of the Club and their friends (in all 920) assembled to hear Mr. EDWARD WHYMPE describe his ascents of Chimborazo and Coto-paxi. The lecture was originally to have been delivered in December 1880 during the term of office of Mr. C. E. MATHEWS as President, but was unavoidably postponed. By special request of Professor BONNEY, actual President, the Chair was now taken by the former gentleman. Among the guests were H.R.H. the Prince of Wales, the Presidents of the Royal, Geological, and Zoological Societies, Mr. Millais, R.A., the Marquess of Queensberry and Lady Florence Dixie, Lord Houghton, Dr. Warren de la Rue, F.R.S., &c.

The Chairman in introducing the lecturer made a few brief remarks upon the progress of the art of mountaineering, and expressed on behalf of the Alpine Club their appreciation of the liberality of the Royal Institution in placing the theatre at the disposal of the Club for the evening, and the grateful thanks of the Club for the courtesy and consideration with which they had been received.

Mr. WHYMPE, who was much applauded on rising, then delivered a most interesting address, which was listened to throughout with marked attention. The lecture was illustrated by sketch maps, photographs, and plans. At its conclusion, the Prince of Wales, in a few short and graceful phrases, moved a vote of thanks to Mr. Whympier for his interesting and entertaining lecture. This was seconded by Professor Bonney and carried by acclamation. Mr. Whympier briefly acknowledged the compliment, and the proceedings terminated.

A very complete collection of Inca antiquities, photographs, mountaineering impedimenta, &c. was displayed in the Library of the Institution.

At a General Meeting held March 1, 1881, Mr. CRAUFURD GROVE (*Vice-President*) in the chair, the following gentlemen were balloted for and elected members of the Club:—

Messrs. A. S. BICKNELL, CHARLES H. STANLEY, J. B. SCRIVEN, Rev. E. CARUS SELWYN, and Monsieur HENRI VINCENT.

Mr. C. E. MATHEWS proposed on behalf of the Committee the fol-

lowing rule with respect to the use of the Library of the Club by members:—

'No book or publication shall be taken away from the Club Rooms unless by the Editor for the time being of the "Alpine Journal," or with special leave of the Committee, by a member engaged in study or research connected with the objects of the Club.' Mr. TUCKER seconded the proposition, which was also supported by Mr. HINCHLIFF and Mr. WM. MATHEWS. After the Chairman had added a few remarks in favour of the motion, it was put and carried unanimously.

Mr. DENT (late Hon. Sec. and Treasurer of the Club) then brought forward the accounts for 1880. Some discussion ensued, in which Messrs. W. E. HALL, WM. MATHEWS, MOORE, WALLROTH, and HEATHCOTE took part, and Mr. DENT having replied, the accounts were unanimously passed.

Mr. WM. MATHEWS (one of the Treasurers of the fund) made a statement with regard to the 'Elijah Walton Fund.' It appeared that upwards of 300*l.* had already been collected, and that it was proposed to invest this sum for the benefit of the children of the deceased gentleman.

The Chairman gave notice that Mr. FRESHFIELD, who had been announced to read a paper on 'Corsica,' was unavoidably detained in Rome, and that the reading of his paper had been in consequence postponed. The Hon. Sec. then read a paper on 'The Ascent of Monte Viso from the North,' by Mr. COOLIDGE, who had at the shortest possible notice come to the rescue, but who was unable himself to be present. At the conclusion of Mr. COOLIDGE's paper, Mr. WM. MATHEWS (who made the first ascent of Monte Viso) offered some remarks, and was followed by Mr. C. C. TUCKER, one of the few other Englishmen who have ever been up the mountain. The Chairman then proposed a vote of thanks to Mr. COOLIDGE, which was carried *nem. con.*

At a General Meeting held on April 5, 1881, Professor BONNEY (*President*), in the chair, Mr. J. A. HUTCHISON was elected a member of the Club.

Mr. BAUMANN read a paper upon 'The Ascent of the Aiguille du Plan,' at the conclusion of which Messrs. DAVIDSON and HOARE made some short remarks with regard to the mountain. On the motion of the President a cordial vote of thanks to Mr. BAUMANN was carried *nem. con.*

Mr. WHYMPER exhibited some magnificent photographs of Chimborazo and the surrounding region, which had been enlarged by the Autotype Company from smaller photographs taken on the spot by himself.

Errata.

- Page 95, line 4 from bottom, *for* 'Hutchinson' *read* 'Hutchison.'
- " 131, " 24, *for* 'eastern' *read* 'western.'
- " 133, " 19 from bottom, *for* 'desplans' *read* 'des plans.'
- " 161, " 18 " " 'Guglielmina's' *read* 'Guglielminas.'
- " 166, " 9, *for* 'Montium Maleetiorum' *read* 'Montium Malethorum.'
- " 167, " 3, *dele* 'the late.'
- " 171, " 12 from bottom *for* 'Col de Tenda' *read* 'Col di Tenda.'
- " 177, " 10, " " " 'unable' *read* 'able.'



THE GREAT 'QUEBRADA' AT QUITO.

THE ALPINE JOURNAL.

AUGUST 1881.

EXPEDITIONS AMONG THE GREAT ANDES OF ECUADOR. IV.

March 27, 1880. From Quito to the Village of Guallabamba.—

We now proposed to explore the great mountains in the immediate vicinity of the Equator, and started almost entirely in the dark as to where we were going; for the country to the north of Quito is very rarely visited by travellers, and no reliable information could be procured as to routes, stopping-places, or the possibility of procuring food. I was favoured by letters of introduction from some of the members of the Aguirre family to large proprietors in the north of Ecuador, and found these of much service.

The party consisted of the two Carrels, Verity, and of the principal arriero (by name Cevallos) we had taken on several previous journeys, who was assisted by a second mule-driver of a jovial temperament, much given to strong waters, and by a very willing and pleasant-tempered native, David Beltran. These three men came from Machachi, and formed an excellent working team. Four beasts were taken for riding and four for baggage.

Left Quito at 7 A.M., and steered a course a little to the east of north for a considerable distance over the plain of Tumbaco. Arrived at the southern edge of the great *quebrada* or ravine of Guallabamba, at 11.50. Found the height here was 9,306 feet. The view from this point was vast, overlooking a wonderful extent of country, fissured in a multitude of places by earthquake cracks, the greatest of which it was necessary to cross. Took 1 h. 35 min. descending to the bottom of it, and there found the

height above the level of the sea was 6,472 feet. This fissure was therefore, in round numbers, 3,000 feet deep. Left the baggage train behind, and rode rapidly ahead with Verity to the village of Guallabamba (7,133) arriving at 3.40 P.M. Encamped on the south side of the Plaza. Haggled with the natives for fowls. No bread could be got, as it only came from Quito once a week, and the last arrival had all been consumed. Oranges were plentiful at four a penny. The natives were much amused at our strange ways, and many of them had never seen a foreigner before; the last *gringo*, they said, who had passed through the village, came there about two years ago.

March 28. From Guallabamba to the Hacienda Guachala.—

Continued on our way towards Cayambe mountain, passing through the small village of Cousobamba, and arriving by nightfall at the large farm called Guachala, belonging to the Aguirre family and leased to Señor Jarrin. This is a very large property, yielding a rental of 12,000 pesos (about 1,700*l.*) per annum, and is situated in one of the most pleasant localities we visited. The tenant was absent, and we were very politely received by his major-domo—who made us quite at home. Food was scarce, and our mountain smothered up in clouds.

- „ 29. *To Cayambe Village and back to Guachala.—* Having great doubts as to the eligibility of our residence as a starting-point for an ascent of Cayambe (none of the persons attached to the establishment could afford any local guidance), we went over to the large village or small town of the same name in search of information. Discovered its inhabitants engaged in the sport of cock-fighting, and found it difficult to get their minds to bear on anything else. The chief political personage, to whom we brought letters, said he could furnish us with an Indian guide; but, do what we would, the conversation invariably bore round to cock-fighting, which in this region is considered the most rational and delightful of all sports. Every person of the least pretension to respectability keeps a score or more of cocks.

In the evening returned to Guachala, having learned something about routes for approaching Cayambe mountain, and a promise from Señor

Espinosa (the proprietor of a large part of the mountain) that he would accompany us with some of his people to point out the best way.

March 30. From the Hacienda Gunchala to that of Chuarpongo.—The weather until 9 A.M. totally prevented us from seeing Cayambe. It then cleared a little, and we had a view for a few minutes of the upper part of the mountain, which still was many miles away. Left the hacienda at 2.15 P.M. (taking all our beasts and people as before), met Señor Espinosa at Cayambe, and was conducted by him to a small farm called Chuarpongo, lying S.E. by S. from Cayambe village. Passed the night there upon a heap of potatoes.

- „ 31. *From the Hacienda of Chuarpongo towards Cayambe Mountain. Get separated from the rest, and pass the night alone.*—Got off at 5.5 A.M., accompanied by Señor Espinosa, three additional natives, and five fine deerhounds. Course at first was E.S.E., and subsequently led for a considerable distance up a valley called 'the monk's valley.' Ultimately we crossed over the dividing ridge into another valley on its S.E., and then bore N.E. directly towards our mountain. At the head of this we stopped to eat at 10.15 A.M., and then continued up some very steep ground towards the N.N.E., on the top of which we came to another small valley, which was slightly inclined and very swampy.

On arrival at this, Jean Antoine Carrel (who had marched on in front) was nowhere to be seen; so, halting the rest of the party, I disencumbered myself of all I was carrying and started off to search for him. After mounting some rocks on the north side of our valley for about 200 feet I descried Carrel in the distance half a mile or so ahead, and shouted to the others to follow him, whilst I continued to go along the rocks by a course parallel to them, intending to rejoin them when the cliffs became less precipitous. The swampy ground below forced them farther away, and the rocks presented no openings by which a descent could be made, so that at length they became out of sight and hearing. I continued, however, to progress in the direction in which they had been told to go, and had no doubt for a long time that we should ultimately come together again.

About mid-day clouds formed all about our neighbourhood, and the aspect of affairs looked less promising. I had arrived close to the spot at which we were to have encamped, but could not see twenty yards in any direction, and no response came to my continual shoutings and whistlings. About this time I was joined by one of the hounds, who seemed much puzzled, and ran about in every direction, stopping continually to listen, and hearing nothing. Being quite certain that we had gone as far as the selected camping-place, I then bore round to the south, supposing that I should cross the trail of the others and be able to follow them up; but after going more than a mile and finding no track, I concluded that they must have passed over some of the rocks and left no trace, and so proceeded higher up, purposely selecting such ground as would allow a good track to be formed in it, with the view of facilitating my own return or of enabling them to find me. This idea did not serve, for presently it began to snow, and the track was obliterated almost as soon as it was formed.

Continued searching, calling and whistling until 2 P.M., and then, as the aspect of affairs was becoming serious, being 16,000 feet high, without any food, or wraps, or means of obtaining fire, and having six inches of new snow over the ground, I concluded that it was time to regard my own safety. Could not recover my own track, and ultimately decided to steer due west for Cayambe village. Got down to about 13,000 feet by nightfall into a pathless valley, and encamped in a little thicket which had been used as a lair by wild cattle. Rain fell seven hours during the night.

April 1. Return to Cayambe Village.—Continued down the valley (the White Valley) and arrived at the village at 9.15 A.M. Great amazement amongst the elders at my return. Despatched a man to advise the others, went to bed, and slept till 4 P.M.; soon after which J. A. Carrel arrived with Verity and Señor Espinosa. It appeared that the others had discovered and followed my tracks until it was evident that I was making for the village, and as they were advised by the natives that 'the White Valley' was pathless and impassable, they concluded it was best to

return to the village, by the way we had come, to organise a party of searchers. Slept at Cayambe, and issued more stringent orders than ever in respect to straggling.

April 2. From Cayambe Village to Camp on Cayambe Mountain.—Left at 9.15 A.M., with J. A. Carrel, and got up to the camp (14,760) by 3.15 (no halts). Found that my bunch of keys had been stolen in the village while clothes were being dried, which caused much inconvenience and loss, as several of our locks were by Chubb or Bramah, and could not be picked. Stomach began to go out of order from the recent exposure.

„ 3. *In Camp on Cayambe, and preliminary reconnaissance.*—Much rain and some snow fell during the night. Min. temp. 27°. Puma tracks round the tent in the morning. In course of the day ascended a small peak (16,160) at the back of our camp, and obtained a fair general view of the western side of the mountain. Picked out a route, and anticipated more difficulties from wind and mist than from other causes. At this time of the year 16,000 feet marked tolerably exactly the snow-line on this side of Cayambe. The glaciers descend considerably lower.

Sent Verity and the arriero's assistant in the afternoon down to the village to bring up more food.

„ 4. *Ascent of Cayambe.*—Very windy and cold in the night, though the min. temp. was only 31°. Up at 3.30 A.M., and off at 4.40 with both of the Carrels and David as a porter. Sent him back to keep camp along with Cevallos when we reached the edge of the glacier. Tied up at 5.50; the day so far being fine and clear. The view at this time was of the most extensive character, and embraced almost all the mountains which have hitherto been enumerated in this itinerary. After a little easy work on the glacier, we became involved in a very complicated maze of crevasses; then entered on some large and moderately-inclined slopes of snow-covered glacier (the Grand Plateau), which took three quarters of an hour of steady going to cross; and then had steeper slopes of varying character (always, however, snow-covered glacier) right up to the summit (19,200).

Early in the day clouds began to form and to gather beneath us; and we pushed on without halt-

ing at all, to endeavour to get a view from the summit. At 9.30, when only a short distance beneath the highest point, we were well seen by the crowd assembled on the Plaza of the village; but in a few minutes more the clouds caught us up and we saw nothing further until the close of the day. This was one of the greatest disappointments we experienced. In order to save time, we had advanced our food and apparatus on the 3rd to the edge of the glacier, and had cut steps up on to it; we started on the 4th long before daybreak, and used a lantern up to the edge of the glacier; and went on without a halt of any sort, except the necessary delay in putting on gaiters and rope, right up to the highest point, nearly 5,000 feet above our camp, in a little more than five hours, a rate which we did not equal on any other occasion—yet we were just too late, and saw nothing.

The summit of Cayambe Mountain is composed of three irregularly-shaped domes, of which the central one is the highest. The other two would be inaccessible to any except the very best ice-men. The central one was not easy of access, and we regarded it as a stroke of good fortune that we found a bridge across the highest crevasse. Strong wind sprang up while we were on the summit, and drove us away. We descended leisurely, and arrived at camp early in the afternoon.

April 5. In Camp on Cayambe.—Much rain and sleet fell in the evening and night, and there was again strong wind from the west, with a min. temp. of 24°·5 Fah. The eyes of J. A. Carrel not being affected by yesterday's work, he was sent away with David to commence exploration of a route to Sara-urcu.

This mountain, which has scarcely been heard of in England, was said to be very lofty—one authority, Villavicencio, placing it as high as 17,400 feet. Neither at Quito or elsewhere was I able to gain any information as to its whereabouts beyond that it was situated about the Equator, and I started for it with no further information, though in possession of letters of introduction to Señor Espinosa, the proprietor of Cayambe, who, when he heard me mention the name, declared that the mountain belonged to him, and that he would point out its direction.

When we started for the ascent of Cayambe, Señor Espinosa accordingly accompanied us to a height of about 14,000 feet, and pointed out a vague something in the clouds, which he said was Sara-urcu; but we did not see it until several days afterwards, and then it appeared only for a few seconds, just long enough to give an idea of its general direction. In those few seconds we saw, however, that we should, in all probability, be able to get up it, if we could arrive at its base.

This was the first thing to do, and before breaking-up camp on Cayambe I sent J. A. Carrel and David in advance to prospect, to see if they could find another camping-place further on. They reported that they had found *a regular palace, planted all round with shrubs*, and we accordingly transferred ourselves and all our animals to it on April 6, finding on arrival that it was a solitary and deserted Indian hut (called La Dormida) in the midst of a primeval forest (11,800).

At this time I was ill with fever and other complaints, and went to bed in the hut during the 7th, 8th, and 9th, sending out on each day successive parties in search of a way. They all came back with most dismal reports. The animals, they said, could go no farther; there was an end to all paths or tracks, except occasional wild-beast tracks; there was nothing whatever to eat, and everything must be carried; there was no place to camp, the whole country was a dismal swamp; and everlasting rain was falling, so that, although they supposed that they had been somewhere near Sara-urcu, they were quite unable to be sure. On discussion, we came to the conclusion that we must leave our tents behind, as we were not strong enough to carry both them, the wraps, and the food. Hence it was indispensable to find a place which would afford some little protection against weather and wild beasts, and on the third day they reported having found an overhanging rock which would answer sufficiently well.

April 10. From La Dormida towards Corredor Machai.—

We made a forward move, leaving two men at the hut to tend our beasts, and keep up communications, half of our party going in advance, and the rest, including myself, waiting for the arrival of additional

provisions from Cayambe village. These arrived late, and delayed us so much that we could not reach the next camping-place at Corredor Machai by nightfall, and had to camp in a swamp, on a spot where, if you stood still, you sunk up to your knees in slimy slush. This position was 13,000 feet above the sea, and during the greater part of the eleven hours' night sleet or rain was falling, rendering it well-nigh impossible to keep up a fire out of the sodden materials. For me the men constructed a sort of floating bed, cutting down the reeds, and crossing and recrossing them, piling them up until they no longer sunk into the foul slime. For themselves they constructed smaller platforms of a similar description, and sat on their heels during the whole night, trying to keep up the fire.

April 11.—We advanced and rejoined the others, having to pass through a country more difficult than anything we had hitherto encountered. The land was entirely marshy, even where the slopes were considerable; and upon it there was growing a reed or cane in such dense masses as to be well-nigh impervious. It was impossible to make any use of our machetas, for it would have taken several weeks' labour of our whole party to have cleared a track over a single mile. The only way of getting through it was by continually parting it with the hands, and, as it was exceedingly stiff, and taller than the tallest man, it sprung back directly we let go, and shut us out from each other's sight. The edges of the leaves were exceedingly sharp and cut like razors, so that in a short time our hands were streaming with blood, for we were compelled every now and then to grasp them to save ourselves from sinking in the boggy soil. On this day we crossed the ridge dividing the eastern from the western rivers, and the streams now commenced to flow towards the Atlantic.

We joined the others in due course under an overhanging rock of mica slate, which we afterwards found was known by the name of 'Corredor Machai,' or the hunter's refuge. It was almost the only spot in the whole district where it was possible to camp, and it afforded good protection on one side, of which we were glad, as there were numerous tracks of bears, pumas, and other wild beasts round about.

At midday I sent away two men to advance provisions in the direction in which I supposed our mountain was situated, and they returned with a human skull which they had picked up not far away. 'I know that skull,' said one of the Indians who were with us, 'it belonged to a man who went out here searching for quinine bark; there were twenty of them altogether, and four came back. This one went to sleep, and did not wake again.' Sent back some of our men to bring up more provisions from the last camp.

April 12. Corredor Machai to Camp on Sara-urcu.—I advanced with the Carrels and two natives to the spot where the food was placed yesterday, and left the rest at Corredor Machai to keep up communications with the previous camp. On this day we had to descend to the bottom of a valley and remount on the other side, and whilst so engaged we saw a large black bear crossing our track, and going through the reedy stuff right ahead as if it interposed no obstacle. We shouted to it, but it scarcely deigned to notice us, and only just turned its head aside for a moment and went straight on and vanished in a thicket of scrub. Tracks of wild animals were more numerous than ever here, and afforded us some assistance, as the canes had often been trodden down. We seldom on this day saw more than 200 yards in any direction, rain falling in a steady mizzle; and we encamped in the afternoon against a rock at the height of 13,700 feet, not knowing where we were, though believing that we were close upon Sara-urcu.

„ 13. *In Camp on Sara-urcu.*—We remained at the same spot, making small excursions in various directions to try and find out where we were, discovering nothing, however, beyond a large glacier on our north, which we rightly judged proceeded from our mountain. The elder Carrel returned to camp in the course of the afternoon, saying, 'Monsieur, just now I was over there, looking down at the glacier to try to find a way, when I heard a noise behind, and turning round saw two big bulls a few yards off, advancing with their heads down ready to pitch me over the precipice. I ran away up a rock, and they came after me, and one stood on one side and the other on the other, and when I tried to escape on one side

they both came there, and when I tried the other side they both went there, but at last I escaped, and here I am, quite out of breath.' 'Monsieur,' he said, 'on my word of honour, they were as fat as butter, and skipped about like chamois!'

April 14. From Camp on Sara-urcu to Corredor Machai.—As rain continued to fall without intermission, and we were sodden, without having the means of drying ourselves, we descended to Corredor Machai, leaving such things behind as we could venture to leave at the higher station.

Rain continued the whole day in a drizzle, which prevented us seeing any distance. The wind blew steadily from the east, though occasionally shifting to the north or south. We were evidently placed just at the meeting place of the winds blowing from the two sides, for in occasional openings which occurred towards Cayambe Mountain we not unfrequently saw that that mountain was clear, through north-west wind blowing upon it, and keeping back the easterly drizzle in which we were enveloped. It was hard to keep up the spirits of my people. They all wished to return.

„ 15-16. *At Corredor Machai.*—Sent most of the people down to bring up food. It rained nearly all this day, and the next also until 5 P.M., when it cleared up a little, and showed us the position of Sara-urcu. I at once secured its direction precisely by theodolite, and made a sketch. This was the only occasion on which we had seen the mountain so far, and we did not see it again until the day we were quitting the district.

„ 17. *Ascent of Sara-urcu.*—Having now got the bearing of the mountain exactly, its doom was sealed, and 5.30 A.M. (daybreak) on the eleventh day this affair had occupied, the Carrels and I started, taking two Indians part of the way as porters, and by a forced march reached the summit of Sara-urcu by half-past 1 in the afternoon, never seeing the top until we got on it, trusting to the guidance of the compass alone during the ascent. But we did not trust to it alone for the descent, and in order that we might return the exact way that we came, we cut a bundle of tops from the reeds, and planted them one by one in the snow on the glacier, so that let hail fall, or let the wind destroy our track, we had the

means of making a quick return ; and it was exceedingly pretty when coming down to see the manner, as sailors would say, in which we picked these up. One had not died out of sight before another began to loom in view, and we came down without the least stoppage of any sort whatever, though, being surprised by darkness before we could arrive at Corredor Machai, we had to pass another wretched night at the higher station.

Our work accomplished, we left Corredor Machai on the twelfth day, stopped for a day of rest at the hut (la Dormida), and on the fourteenth day that this little journey occupied arrived again at Cayambe village, heartily welcomed by the inhabitants, who did not expect to see us return from that dismal country.

(To be continued.)

THE GROWTH OF MOUNTAINEERING. By C. E. MATHEWS, late President of the Club. (Read before the Alpine Club, December 15, 1880.)

All experience is an arch where thro'
Gleams that untravell'd world, whose margin fades
For ever and for ever when I move.

TENNYSON.

IT is not unusual in ordinary literary or scientific societies for their presidents to call public attention to the various matters of interest and importance which have occurred during their period of office ; and I venture to think that it might be of considerable practical utility to us if we established such a custom in connection with this association.

Your President occupies an important and an honourable office. He is intimately acquainted with the traditions of Alpine government. He watches keenly the state of Alpine morals. He has sources of information open to him which are not always accessible to ordinary members. He has formed opinions as to what reforms or changes are necessary in object or in organisation. He is 'en rapport' with the various foreign clubs. Surely his colleagues have a right to expect something more from him when he is on the point of handing over the reins of government to his successor, and beginning to pale his ineffectual fire, than that he should slink away.

like the Ghost from the battlements at Elsinore, feebly muttering—

Adieu, adieu, adieu, remember me.

I propose to say something to you about the growth of mountaineering.* I do not intend to confine myself to the work of my own term of office, the past three years. We are making Alpine history with extraordinary rapidity. The ascent of the Dru, the ascent, of the Meije without guides, the passage of the Col du Lion, and the ascent of the Matterhorn from the Zmutt and from the Furggen glaciers, seem to close another chapter in the annals of mountaineering. But life, especially our life, is full of new points of departure, and no point of departure is more marked, or is likely to lead to more enduring results, than the expedition of Mr. Whymper to South America, and his excursions among the Great Andes of Ecuador.

Yet the prehistoric epoch was not so long ago. It is less than forty years since Forbes first visited Zermatt. It is only twenty-five years since the highest peak of Monte Rosa was attained. I desire to give you a bird's-eye view of our mountaineering history, from the ascent of Monte Rosa in 1855 to the ascent of Chimborazo in 1880. Possibly, by the patient observation of facts, theories may be constructed, from which lasting results may be obtained.

In 1855 mountaineering, properly so called, was in its earliest infancy. Mont Blanc, of course, had been ascended many times, but that expedition is not necessarily mountaineering. The men who practised climbing for its own sake were so few that they might be counted on the fingers of one hand, and the mountains that had then been ascended were not much more numerous than the climbers.

The original founders of the Club gained their Alpine laurels between 1854 and 1859, during which years the Wetterhorn, the Finsteraarhorn, the Aletschhorn, the Bietschhorn, the Eiger, the Mönch, the Grivola, the Combin, the Fletschhorn, the Allalinhorn, and the Dom were climbed, many of them for the first time.

Attention was called to Alpine expeditions in 1856 and

* The remarks in the following pages refer to the exploits of English climbers *only*, the wish of the author being to trace the art of mountaineering as developed by his own countrymen, and not to sketch the history of mountaineering in general. Hence he has not mentioned, save in a very few cases, any of the expeditions made by foreign climbers.

1857, by the appearance of two charming volumes by gentlemen subsequently my predecessors in this chair—Mr. Hinchliff and Mr. Alfred Wills.*

The success which attended the publication of 'Peaks, Passes, and Glaciers' in 1859 intimated as much as it created the popularity of mountaineering. The modest conclusion of the preface to its first edition is worth recording:—'The degree of success,' says the Editor, 'that may attend the present volume, and the extent and value of the new materials that may be accumulated in the course of fresh expeditions, will probably decide whether a new collection of Alpine adventures shall at some future time be presented to the public.' The venture was put forth almost with a protest. The Editor may have had his ideas, but he was clearly of the opinion of Hosea Biglow that you should never prophesy unless you know. But how could he possibly have anticipated the immense mass of material he soon would have at his command? Edition after edition of the volume went rapidly through the press. The publishers were complacent, but bewildered. The critics were surprised and mostly unfriendly, and the 'Times,' in a memorable article, said that we excited in the spectator as much alarm as admiration.

Three years later (in 1862) the second series of 'Peaks, Passes, and Glaciers' was published, no longer as a bold experiment, but as an assured success. The interval had been well employed; there had been some failures, but the first English ascents of the Bernina and Mont Pelvoux had been accomplished; the Nord End, the Lyskamm, the Schreckhorn, the Grand Paradis, Monte Viso, and the Blumlis Alp climbed for the first time; and new passes made all over the Alps, far too numerous to record. From that time it may justly be said that the craze for Alpine adventure set in.

But what was the intelligent foreigner doing all this time? Everything was to the disadvantage of the Englishman. He sees no sun-smitten Alps as he rises from his bed in the morning. It is not given to him to telegraph to a favourite guide, to inquire what the weather is in a particular district, and on receipt of a favourable reply to start on a visit to him in the course of the afternoon. How was it that the English were generally the first to carry off the honours that lay far from their own doors, while the dwellers at the very feet of the mountains seemed hardly to know their position, or their

* 'Summer Months among the Alps,' and 'Wanderings in the High Alps.'

names? It is pursuit, and not possession, as the philosophers say, that gives happiness to mankind. Perhaps, in this communistic age, there was some feeling that the pursuit of the property of other nations gave additional zest and interest to our occupation.

The Austrians, in 1862, were the first to follow our example, and to form an Alpine Club. Then, in April 1863, the Swiss discovered that 'those English' were taking their mountains out of their hands, and they hastily followed suit; then the Italians (October 1863), then the Germans (1869), and last of all (not to speak of the Pyrenean, Styrian, Trentine, Dauphiné, Carpathian, and Polish societies) the French, whose club was only definitely founded in 1874, but who now number nearly four thousand members, and have sections, with independent administrations, in twenty-four districts of France. Since that time Spain too has founded its Alpine Club, and I have reason to believe that any important article in the 'Alpine Journal' runs a good chance of being translated into Spanish for the benefit of the 'Society of Excursionists of Catalonia.'

Englishmen had made the Alps a playground, but no sooner was it known what ambitions could be gratified there, than Germans, Italians, Swiss, and Frenchmen, claimed some share in the honour and the spoil. But notwithstanding the friendly rivalry of other nations, our countrymen continued their explorations with a tenacity and a success worthy of their race. A new summit was of course the first object of ambition, the second to climb an old mountain from a new side. The Dent Blanche, the Aiguille de Bionnassay, the Pointe des Ecrins, the Rothhorn, the Piz Roseg, the Aiguille Verte, and the Matterhorn, were all first conquered by Englishmen. Mont Blanc was crossed from Courmayeur first by the Brenva glacier, and afterwards by the Brouillard and the Miage glaciers. The Matterhorn was crossed from Breil, and the Lyskamm from Gressoney.

We were contented no longer with the publication of isolated books of adventure. The time had arrived when an organ of our own was indispensable. We wanted not only an authentic record of constantly recurring adventures, but a means of communication with one another. The 'Alpine Journal' was started in March, 1863. It professed to report all new and interesting mountain expeditions, whether in the Alps or elsewhere, and generally to record all facts and incidents which it might be useful for the mountaineer to know. That publication, which during the first eighteen years of its

existence only had three editors (the Rev. H. B. George, Mr. Leslie Stephen, and Mr. Douglas Freshfield), is still as fresh and as interesting as when it was started. Greater knowledge on Alpine subjects has only inspired its editors with greater confidence, and, instead of anticipating that they might be brought to a standstill for lack of matter, they have boldly called attention to the numerous mountain ranges in all parts of the world which the foot of the Englishman was one day destined to scale, and 'have deferred the prospect of the starvation of their paper for want of matter whereon to feed to some date beyond the scope of their calculations.'

I trust that I may be allowed to pay a just tribute to the editors of that periodical. They have supplied us with authentic records of every new expedition; their pages have been open to scientific controversy; every important Alpine publication has been passed under review; valuable information has been afforded about Alpine and sub-Alpine districts all over the world. We have had a ready means of communication with the members of foreign Clubs, and upon the whole a better printed, better illustrated, better edited publication for our purposes could not have been desired. First efforts of aspiring writers are to be found there, together with the polished articles of practised critics; many pleasures of memory lie entombed there; it teems with information on every subject connected with our favourite pursuit, which can be obtained from no other source. It is a splendid record of unfulfilled prophecy. The time will come when its pages will be eagerly scanned by all those who are interested in Alpine history or Alpine archæology.

As years went on, the great European playground was more and more frequented. The rapidly decreasing number of virgin peaks caused a new expedition to be the object of greater and greater ambition. Some of the older members of the Club foresaw that the word 'finis' would have to be written to purely Alpine novelties, and began to cast their eyes on other and more distant fields.

In 1862 and 1863 Mr. Evans made some important excursions in Iceland. In 1866 Mr. Leslie Stephen made some most interesting excursions in the Eastern Carpathians. In 1867 Mr. Ormsby investigated the Sierra Nevada. Important rambles in the Himalayas were made by Mr. Cheetham and by Captain Smith. Corsica was visited by Mr. Hawker. Mr. Whymper spent a long holiday in Greenland. Mr. Hall investigated Lapland, and the exploration of the snowy chain of the Caucasus begun by Mr. Freshfield, Mr. Moore, and

Mr. Tucker in 1868, and continued in 1874 by Messrs. Moore, Grove, Walker, and Gardiner formed another new departure in the history of mountaineering.

So far as the Alps are concerned, I should venture to fix the year 1870 as the time when, except in parts of the French Alps, all the ordinary mountains had been scaled, and when with few exceptions all the passes had been made which afforded a ready means of access from a valley on one side of a ridge to a valley on the other.

But the members of the Alpine Club are fellows of infinite variety. Men laid themselves out for expeditions, which would take them from one point to another, with greater labour and difficulty than by the routes already discovered. They claimed subordinate Aiguilles as main peaks; they still insisted on getting up old mountains from almost impracticable sides. Two genuine new passes were made: the Col des Hirondelles by Mr. Stephen; the Col des Grandes Jorasses by Mr. Middlemore. The Weisshorn was ascended by three new routes, the Grand Paradis from Cogne, the Aiguille Verte from the Argentière glacier, the Matterhorn from the Zmutt glacier. New ways were found up the Dent Blanche, the Rothhorn, the Täschhorn, the Bietschhorn, and the Dom. Monte Rosa was crossed from Macugnaga, the Blaitière and the Mont Maudit were ascended for the first time, and the ascent of the Dru by Mr. Dent and Mr. Hartley, a just reward of persistent effort, was perhaps one of the most gallant feats of climbing (with guides) ever recorded in the annals of the Club.

But then some of our members wanted to climb without guides, and a new sensation set in. On this point, as all mountaineers know, there is something to be said on both sides. For many years members of the Club have taken certain expeditions of the second or third order without the aid of guides. One well-known mountaineer has published an interesting work on this subject. But when Mr. Cust, Mr. Cawood, and Mr. Colgrove ascended the Matterhorn, relying only upon themselves and upon one another, there was an outburst of indignant criticism.

For my own part I prefer climbing with guides, but perhaps I have been spoiled by having had for twenty years the services of one who is *facile princeps* in his craft. But climbers increase out of proportion to the increase of competent guides. Can travellers of experience and capacity be expected to put up with men of the third or fourth order? Again, mountaineering is an expensive amusement. Some climbers prefer

to save a cost which is not essential to their enjoyment. Others honestly prefer an immunity from the trouble and inconvenience which guides sometimes involve.

I am aware that few even of the best mountaineers can vie in capacity with a good guide. They lack the instinct that comes from long experience. But climbing is improving as an art; it is becoming more scientific year by year. Men have got more knowledge; dangers and difficulties are better understood, and I take it that men without knowledge and experience are not likely to climb without guides. The excursion to which I have referred, the ascent of Ararat by Mr. Bryce, and the really splendid expeditions of Messrs. C. and L. Pilkington and Mr. Gardiner have placed beyond a doubt that climbing without guides is an interesting, and legitimate outgrowth of modern mountaineering.

I have said that guides of the first order do not increase in proportion to the climbers who need their services. I cannot account satisfactorily for this state of things. Mountaineering is only an addition to the ordinary business of their lives. The pay is high; the work is as interesting to them as it is to us, and other inducements are held out to them. We treat them as we ought to do, like valued friends; they have wandered with some of our members in all quarters of the globe; they have strange and varied experiences. I once took Anderegg down a deep coalpit, as the most vivid contrast I could find to his usual occupations. Payot has been in America, Knubel in the Caucasus, Cupelin at Teneriffe, Maurer in the Himalayas. Devouassoud has bought souvenirs for his friends at Chamonix in the bazaars of Jerusalem and Tiflis, and Jean Antoine Carrel completed his experiences of the Andes by leaving behind him a considerable part of his well-earned remuneration in one of the pot-houses of Guayaquil.

The past few years have been fruitful in expeditions to distant regions. Mr. Tuckett and Mr. Blackstone ascended Mount Delphi in Eubœa, Parnassus and Mount Ziria in the Morea. They consulted no oracle, so far as I am aware; possibly, if they had, they would have received no assistance of permanent value. On one of their mountains they experienced an earthquake, quite a novel and unexpected element in the dangers of mountaineering. Mr. Tozer paid a visit to Cappadocia and ascended Mount Argæus. Mr. Eccles has done valuable work in the Rocky Mountains, and given us the benefit of his interesting researches in Wyoming and Idaho; and Mr. Scott has ascended Sikaram, one of the highest mountains in Afghanistan.

Of Mr. Whymper's famous exploits I shall say but little—we shall soon have the opportunity of hearing his own account of his adventures—but his expedition marks a new era in mountaineering history. It is no small feat to have made the first ascent of Chimborazo. It is no small feat to have slept on the top of Cotopaxi. But add to these the ascent of seven other first-class mountains, the lowest of them being about the same height as Mont Blanc, and we have a record of successful achievement without parallel in mountaineering annals. Yet this is not all. If Mr. Whymper had been favoured with local knowledge, or aided by local assistance, serious difficulties would have been avoided; but the natives knew nothing either of the position or even the names of the mountains amongst which they lived. His porters deserted at critical moments; his time was taken up in looking after deserters by the aid of more trustworthy servants, who also deserted in their turn; and he had to rely almost always upon himself and the Piedmontese guides who accompanied him. If the weather, too, had been fine he might have faced his difficulties with a lighter heart. But amongst the mountains of Ecuador it appears to rain perpetually when it does not snow; it is only at rare intervals that even a sight of the mountains can be obtained. It required, as Mr. Whymper has told me, no common obstinacy to grapple with the difficulties which surrounded him. But Mr. Whymper is a climber of uncommon obstinacy. Though snow was so soft that it had to be beaten down, and then crossed on all-fours; though tents had to be left, and the travellers to sleep out in the open, night after night, at an elevation of 13,000 or 14,000 feet; though snowstorms raged with such pertinacity that the route had to be marked with canes, lest tracks should be obliterated and retreat cut off; though the party was drenched for days and weeks together without the means of getting dry; though Mr. Whymper had used up all his medicines, and at one time suffered so severely that he thought it questionable if he should ever return, yet he resolutely accomplished his purpose, and did not leave one single failure behind him. A memorable expedition, honourable alike to Mr. Whymper and to the Club of which he is so distinguished a member.

My survey of the progress of mountaineering would be incomplete without a reference to that passion for novelty which has sent many of our members to the Alps in the depth of winter.

Mr. Kennedy began in January 1862. It seems to have

occurred to him that, as the Matterhorn was apparently impracticable in the summer, the heavy winter snows might help him over the difficulties, and the narrative of his wrestling with the winter blasts on the ridge of the Hörnli, forms one of the most interesting of the early contributions to the 'Alpine Journal.' In December 1866, Messrs. Moore and Walker spent ten days at Grindelwald, when, with three feet of snow in the street, a keen frost, and a full moon, they found ample opportunities for enjoyment. They crossed the Finsteraarjoch and the Strahleck by night, reversing with marked success the usual order of Alpine expeditions. The next winter Mr. Moore went out alone and crossed the Brèche de la Meije under the most favourable conditions. He found, at any rate, that mountaineering in midwinter was not impracticable, and also, as I think, that popular prejudice would continue to be in favour of the summer. The Jungfrau, the Wetterhorn, and the Gross Glockner, all fell victims to winter climbers.

Three attempts to ascend Mont Blanc were made in the month of January 1876. Mr. Coolidge and Miss Brevort spent five nights at the Grands Mulets, and succeeded in reaching the Grand Plateau with the two Almers, but were driven back by severe wind. Mr. Eccles and M. Loppé also slept at the Grands Mulets in the same month, the temperature being only seven degrees below zero at night. They, too, were driven back from the Grand Plateau, covered with ice and blinded with snow, and suffering greatly from the wind; but Miss Straton succeeded in gaining the summit in spite of all obstacles, the temperature recorded being thirteen degrees below zero (Fahrenheit).

In January 1879, Mr. Moore and Mr. Walker made a winter tour in the Dolomites, which included, however, no mountain expeditions. The Piz Bernina was ascended in February of the same year. And on January 27, 1879, Mr. Coolidge reached the summit of the Shreckhorn, and found the temperature at 4.35 P.M. 'deliciously warm.'

Now here is a problem for the scientific members of the Club to solve. How is it that in the depth of winter, in the very heart of the Alps, with snow covering the whole country like a pall, the temperature is higher on the mountains than it is in the valleys?

Mr. Stephen tells us that in the Valley of Engelberg he enjoyed a moderate warmth at a height of 3,000 feet above the sea—above the upper level of the mists—while the dwellers below were exposed to the bitter cold of a genuine winter.

Mr. Loppè tells us that on the night of January 20, 1876, the cold was far greater in the village of Chamonix than at the Grands Mulets or the Grand Plateau. Mr. Coolidge does not tell us the temperature he found at Grindelwald, but he does tell us that almost at sunset on the summit of the Schreckhorn the air was *deliciously warm*.

These are facts which oblige us to alter our preconceived impressions of the terrible cold of the winter Alps. I believe it will be found that the air is lighter and drier at great elevations, and less subject to variation. At any rate, we have sufficient evidence that, for those who can brave long nights, winter climbing (when the weather is calm) is not specially difficult or dangerous, whilst it offers rare opportunities for the study of Alpine nature in its sternest majesty of form.

The Swiss glaciers continue their unfortunate retreat. No one who has visited the Alps with any regularity during the last twenty years can have failed to be struck with the extraordinary diminution in their size; with some of them it is not only retreat, it is catastrophe. The amazing reduction of the high ice mark calls for special observation. What is the cause of it? Whether, as Mr. Stephen suggests, the glaciers are indignant at the increased rush of tourists, and retire sulkily into their hidden fastnesses, or whether the enormous reduction in the acreage of Alpine forests cause a drier atmosphere, and consequently a diminished snowfall, I shall leave for you to determine.

There are still grounds for hope. You will recollect that a few years ago the lower glacier of Grindelwald, in its disastrous retreat, left exposed an old stone quarry, from which, it is said, many of the houses in Grindelwald were constructed not more than 100 years ago. So let us take heart, and trust that the time may come when we may again see the white pinnacles over the moraine of the Glacier des Bossons in the valley of Chamonix, and the extending ice again stretching out into the cornfields as in the days that were.

The observations of the last few years have thrown a good deal of light upon the vexed question of the rarefaction of the air. On this point, I venture to think that more unmitigated nonsense has been talked and written than on any other subject in connection with mountaineering.

In the early days it was thought that no man could live on the top of Mont Blanc, in consequence of the rarefaction of the air. In later days, when any man has failed for lack of training, no matter at what elevation, he has usually attributed

his failure to the rarefaction of the air. Even competent men have hastily assumed that mountaineering at certain elevations would be impossible—those elevations being always a little in excess of peaks that had been already attained. The old explorers had a good deal to say upon this subject. M. de Saussure describes in his celebrated work the effect of the rarity of the air upon the human body at a height of eight or nine thousand feet. He tells us that palpitations come on, obliging the traveller to rest from time to time; but that with a little rest the palpitations cease, and the traveller can go on his way rejoicing. He tells us that once on the Buet, the air plunged one of his guides into profound sleep, but he does not tell us how the guide had been previously occupied.

On another occasion, he says that his party suffered severely from rarefaction, adding, however, 'Il est cependant possible, que la vue de l'horrible précipice que nous avons immédiatement sous nos pieds, ait contribué à augmenter l'effet de cette disposition.'

Now, of course, no one could say that the air is not rarer at higher altitudes than at lower. But the question that concerns us as climbers is this: Is there anything in the rarefaction of the air which will prevent men, in good training and accustomed to high elevations, from climbing to the very highest point of the surface of the earth? Mr. Stephen says that there is a *primâ facie* presumption that climbing is more laborious at the greater height. Most certainly my experience does not justify this view. Mr. Hinchliff has told us that the highest mountains in the world will never be climbed. Dr. Liveing has expressed an opinion that the action of the heart will interfere with success in climbing at great altitudes. Mr. Grove pondered over the subject on the top of Elbruz, and, after arriving at the conclusion that the fatigue his party experienced at a height exceeding 15,000 feet was due to want of training, and only in a small degree, if at all, to the thinness of the air, he says, 'It must be taken for granted that no human being could walk to the top of Mount Everest.' Why taken for granted? In an inquiry of this kind we have no right to assume anything, but only to observe.

I for one have run backwards and forwards on the top of Mont Blanc, with no greater effort than it would have cost me in the fields of Chamonix. Mr. Bryce tells us that he suffered a little from what he supposed was rarefaction of the air, at the height of 13,000 feet on Mount Ararat, but far less at seventeen thousand feet than at thirteen. Herr Von Thielmann tells us, that on the top of Popocatepetl, 17,880 feet,

the travellers were entirely free from all the unpleasant effects wont to be ascribed to the rarity of the atmosphere.

No difficulty was experienced on Elbruz (18,500 feet) by Mr. Freshfield, who tells us that the last 2,500 feet took only three hours to climb. On Cotopaxi, 19,600 feet, Von Thielmann says that only one man complained of headache; all the others were perfectly well. None of the climbers showed any signs of exhaustion, and the appetite of all was brilliant. On Chimborazo, 20,700 feet, on his second ascent in July last, Mr. Whymper felt no inconvenience whatever, and breathed as comfortably as on Primrose Hill.

There is no doubt that persons making balloon ascents, rushing rapidly from a denser to a rarer air, have suffered severely and in one case fatally. Nor is there any doubt that some climbers have suffered from this cause at various elevations; but, so far as our observation goes, a practised and *habituated* climber can breathe with perfect freedom at 21,000 feet above the level of the sea.

I beg to submit to you the following proposition: If the highest peaks of the Himalayas are never climbed, the rarity of the air will not be the cause of failure; and if there be no other drawback, then they certainly will be climbed.

The great growth of foreign clubs has led to international gatherings on a large scale. We have made a point of attending those gatherings, and of showing by our presence and our counsel the interest which we take in the proceedings of our foreign brethren; and I have often regretted that we have not the power or the opportunity of reciprocating, in this country, their kindly feeling and their generous hospitality. We have, however, elected as honorary and ordinary members of our own Club, continental climbers of ability and reputation. We have confirmed and enlarged our own law by which not climbers only, but gentlemen distinguished in Alpine literature or Alpine art, may claim the privilege of membership. We have established offshoots from our own body, and many members now meet in the spring to cement old friendships, and to enjoy the beauties of the hills and lakes of Westmoreland, Cumberland, and Wales.

We look forward with confidence to the future. Whatever is doubtful, this one thing is certain, that mountaineering will never cease to be a genuine sport for Englishmen. It is a sport which, of course, has its own elements of danger, otherwise it might not be as interesting and exciting as it is. Experience has, I think, shown us that all Alpine dangers may be reduced by reasonable precautions to a minimum, and that every accident which has chequered our history, can be

attributed to purely preventible causes. There is no doubt that our obituary is a sad one. I think few members of the Club have any idea of the number of lives lost in the Alps since Edouard de la Grotte fell into a crevasse on the Findelen Glacier twenty-five years ago. On this point, however, I will not enlarge. I will only protest against the carelessness and imprudence which have prevented climbers like Dr. Moseley, and guides like Peter Rubi, from being able any longer to answer to their names when the muster-roll is called.

Men of wealth or of leisure, or in pursuit of some scientific object, will, as the years go on, investigate great mountain ranges, as yet unknown or unexplored. The Caucasus, the Andes, the Alps of New Zealand, and the Himalayas, will find plenty of occupation for the most ardent climbers. But of one thing you may be sure, the Alps will never lose their charm. In a beautiful line in a noble poem, it is said of a woman:—

Like one that never can be wholly known,
Her beauty grew.

‘In that idea is revealed one exhaustless charm in all our true personal relations.’

Things which we know best we weary of the soonest. Things we cannot wholly know are ever unfolding new surprises; they never weary us; they always stimulate our interest and excite our curiosity. It is the same with the Alps. They never can be wholly known. They may be climbed over and over again; but they change from day to day and from year to year; the tracks of summer and autumn are obliterated by the snows of winter; and each new man, each new generation of men will find in them, as we have found, the same novelty and the same charm.

It is possible that some of us who in the old days marched out with uncertain steps to scale some untrodden peak, had a keener pleasure in victory than is known to this generation. Now the younger men are sometimes apt to question our authority and to underrate our achievements. I do not blame them. Authority is not good for much, unless it can stand the test of criticism and of time. But remember what is known to you, was unknown to us. We went out into a strange country, you—with a map in your hands. If you see farther than we did, what wonder—for you stand on our shoulders. We too have our memories and our consolations, and somehow the older we grow, the sweeter the flowers do smell. We have created a new sport for Englishmen. Upon you the responsibility will rest that the future of mountaineering shall be worthy of its present and of its past.

THE PASSES BETWEEN THE VALLEYS OF THE VÉNÉON
AND OF THE ROMANCHE.* By HENRY DUHAMEL.

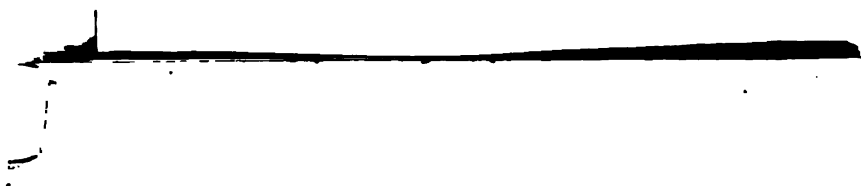
IT has been often pointed out that the main mass of the Dauphiné Alps forms a gigantic horse-shoe, bounded on the north by the Romanche, on the east by the Durance, and on the south by the Severaisse, a tributary of the Drac. The drainage of the enormous fields of snow and ice which have accumulated within this horse-shoe is carried off by the Vénéon torrent, which has forced for itself a way out to the west. In the very centre of this group, at the head of the Vénéon valley, is situated the village of La Bérarde, above which soars the monarch of the French Alps proper—the Pointe des Ecrins (13,462 feet).

Keeping this general idea of the orography of the group in mind, it is easy to fix on the different spots outside the horse-shoe at which routes leading from the interior converge. Thus La Grave on the Romanche slope, Ville Vallouise on that of the Durance, La Chapelle en Valgaudemar on that of the Severaisse, are the points for which a traveller, desiring to escape from the Vénéon valley, must make, unless indeed he descend that valley till it falls into the Romanche valley in the plain on which stands Bourg d'Oisans. In the following pages I propose to indicate the various passages by which the northern or Romanche slope of the horse-shoe may be gained from any of the hamlets in Vénéon valley. I trust that the fact that in almost every case (the exceptions are always indicated) the estimate of the difficulties and length of the pass is based on my own personal experience may add to the value of my summary, as a common standard is thus attained, whereas it is often difficult, if not impossible, to compare passes the accounts of which are supplied by different climbers.

1. *Col de l'Alpe de Venosc* (1,620 mètres = 5,315 feet), mule track. From Venosc to Châlets de l'Alpe, steepish ascent, 1½ hr. (40 min.): thence to village of Mont de Lans over level

* The passes across the lateral ridge extending S.W. from the Râteau (Brèche du Râteau, Brèche du Replat, Col du Replat, Col de la Gandolière, Col de la Selle) and those on the ridges running N. and E. from the Pic Oriental of the Meije (Col de l'Homme, Col Claire) are not included in this paper. The map—a revised edition of that published in the number for August 1879—is kindly presented by the author. The bracketed figures in the paper give the time occupied in traversing the same extent of ground in the *opposite* direction to that actually described.

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to Glacier des Etançons by moraine, $1\frac{1}{2}$ hr. ($\frac{3}{4}$): thence to pass by crevassed glacier and 100 feet of easy rocks, $2\frac{1}{2}$ hrs. ($1\frac{1}{2}$): thence to Glacier de la Meije by steep road or ice wall, $\frac{1}{2}$ hr. ($\frac{1}{2}$): thence by easy glacier to Enfetchores rocks, 20 min. ($\frac{1}{4}$): to base of these rocks, not altogether easy, $2\frac{3}{4}$ hrs. ($3\frac{1}{4}$): thence to La Grave by mule track over moraine and pastures, 1 hr. ($1\frac{1}{2}$): total, 10.35 (10). Best taken from La Grave, as local knowledge is required for the descent of the Enfetchores rocks. We may treat as a variation of this pass the crossing over the summit of the *Râteau* (3,754 mètres = 12,316 feet) made by Monsieur Cordier in 1876. From La Bérarde or S. Christophe to Brèche du Râteau, between Etançons and Selle Glaciers, 6 hrs. (4): to summit by snow ridge, $1\frac{1}{2}$ hr. ($1\frac{1}{4}$): to Brèche de la Meije by difficult ridge, $2\frac{1}{2}$ hrs. ($3\frac{1}{2}$): thence, as above, to La Grave, 4.30 ($6\frac{1}{4}$): total, 14.35 (15).

5. *Col du Pavé or de Castelnau* (3,495 mètres = 11,467 feet). From La Bérarde to moraine of Glacier des Etançons (as 4), $3\frac{1}{2}$ hrs. ($2\frac{1}{4}$): thence to col by easy though steep and crevassed glacier, 3 hrs. ($1\frac{1}{4}$): from col to moraine of Glacier du Clot des Cavales by snow couloir, easy rock buttress and sloping glacier, $1\frac{1}{2}$ hr. ($3\frac{1}{2}$): thence by track over moraine and rock-strewn valley to Refuge de l'Alp,* 1 hr. ($1\frac{1}{2}$): total, 9 hrs. ($8\frac{1}{2}$). From the col the ascent of the *Pavé* (3,831 mètres = 12,570 feet) may be made in $2\frac{1}{2}$ hrs. ($2\frac{1}{2}$) by a difficult rock climb up the S.W. face.

6. *Col des Chamois* (3,150 mètres = 10,335 feet). From La Bérarde to the Châtelleret rock, 2 hrs. ($1\frac{1}{2}$): thence to base of col by easy rocks and névé, $2\frac{1}{4}$ hrs. ($1\frac{1}{4}$): thence up a snow couloir to the pass, $\frac{3}{4}$ hr. (20 min.): thence by snow couloir (joining the route of No. 5 above the rocky buttress) to moraine of Glacier du Clot des Cavales, 1 hr. ($2\frac{1}{2}$): thence to Refuge de l'Alp, 1 hr. ($1\frac{1}{2}$): total, 7 hrs. (7.05).

7. *Col des Aigles* (3,140 mètres = 10,302 feet). From La Bérarde to the Châtelleret rock, 2 hrs. ($1\frac{1}{2}$): thence to col by easy rocks and ice couloir (which is reached by its right bank), $3\frac{1}{4}$ hrs. (2): thence to Glacier du Clot des Cavales by steep rocks, $\frac{3}{4}$ hr. (1): thence to Refuge de l'Alp, $1\frac{1}{2}$ hr. (2): total, $7\frac{1}{2}$ hrs. (7). A somewhat difficult expedition.

8. *Col des Cavales* (3,128 mètres = 10,263 feet). From La Bérarde to the Châtelleret rock, 2 hrs. ($1\frac{1}{2}$): thence by easy rocks, moraine, and snow gully, $2\frac{1}{2}$ hrs. ($1\frac{1}{4}$)

* The Refuge de l'Alp is $2\frac{1}{2}$ hrs. ($3\frac{1}{2}$) from La Bérarde by mule path.

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pastures, with a short descent at the end, $1\frac{1}{2}$ hr. (1.50): thence to Le Freney, on the Lautaret road, good path, $\frac{1}{2}$ hr. ($\frac{3}{4}$): total, $3\frac{1}{2}$ hrs. ($3\frac{1}{4}$).

2. *Col de Roche Mantel* (3,052 mètres = 10,014 feet). From S. Christophe by débris slopes of Tête du Toura to the Lac Noir, $3\frac{1}{2}$ hrs. (2): thence to Roche Mantel by rocky plateau, rising slightly 1 hr. ($\frac{3}{4}$): thence to junction of Mantel and Murethouse torrents, by 150 feet of rocks and afterwards pastures, $2\frac{1}{2}$ hrs. (4): thence to the old mines by a faintly marked path, $\frac{1}{2}$ hr. ($\frac{3}{4}$): thence to Les Balmes on the Lautaret road by mule track over pastures, 35 min. (50): total, 8.05 hrs. (8.20). Less fatiguing when taken from Les Balmes. The Vallon de la Selle may be gained from the Lac Noir by the *Brèche de S. Christophe*, by means of a somewhat difficult rock descent. Mr. Coolidge ('A. J.' vii. 145) took 1.40 to the stream, and about 45 min. more to S. Christophe. From the Lac Noir to the village of Mont de Lans is about two hours' walk.

3. *Col de la Lauze* (3,205 mètres = 10,516 feet). *a.* By the Lac Noir—From S. Christophe to the Lac Noir as above, $3\frac{1}{2}$ hrs. (2): thence to Col de la Lauze by moraine and gently inclined snow-fields, 3 hrs. (2): thence to Col des Ruillans or du Vallon by gently sloping crevassed glacier, $1\frac{1}{2}$ hr. ($1\frac{1}{2}$): thence to Refuge de la Lauze by débris slopes, $\frac{3}{4}$ hr. ($1\frac{1}{4}$): thence to Lac de Puy Vacher by rock slopes, $\frac{1}{4}$ hr. (40): thence by mule path through wood, and over pastures to La Grave, $1\frac{1}{2}$ hr. ($2\frac{1}{4}$): total, $9\frac{1}{2}$ hrs. (9). *β.* By the Vallon de la Selle or du Diable—From S. Christophe to end of Vallon de la Selle by mule path, $2\frac{1}{2}$ hrs. (2): thence by steep rock ascent to Refuge de la Selle, $1\frac{1}{2}$ hr. (1): thence to col by long steepish snow couloir, 4 hrs. (2): thence to La Grave, as *a*, $3\frac{1}{2}$ hrs. (5): total, $11\frac{1}{2}$ hrs. (10). It is pleasanter and better on all accounts to take this magnificent and easy pass from La Grave. From the col the *Pic de la Grave* (3,673 mètres = 12,051 feet) may be climbed in $1\frac{1}{2}$ or 2 hrs. ($\frac{3}{4}$ or 1), according to state of the great N. snow or ice slope. There are two variations of the col when taken from the Vallon de la Selle—i. *Col de Puissailié*, W. of the ordinary route, fit for good climbers only, and not shorter in point of time: ii. *Col de Girose*, to the E. of the Pic de la Grave; wide bergschrund on S. side, steep rocks on N. side. It takes 3 hrs. more than the Col de la Lauze.

4. *Brèche de la Meije* (3,369 mètres = 11,054 feet). From La Bérarde to the Châtelleret rock in the Vallon des Étançons by mule track over pastures and débris, 2 hrs. ($1\frac{1}{2}$): thence

to Glacier des Etançons by moraine, $1\frac{1}{2}$ hr. ($\frac{3}{4}$): thence to pass by crevassed glacier and 100 feet of easy rocks, $2\frac{1}{2}$ hrs. ($1\frac{1}{2}$): thence to Glacier de la Meije by steep road or ice wall, $\frac{1}{2}$ hr. ($\frac{1}{2}$): thence by easy glacier to Enfetchores rocks, 20 min. ($\frac{1}{2}$): to base of these rocks, not altogether easy, $2\frac{3}{4}$ hrs. ($3\frac{3}{4}$): thence to La Grave by mule track over moraine and pastures, 1 hr. ($1\frac{1}{2}$): total, 10.35 (10). Best taken from La Grave, as local knowledge is required for the descent of the Enfetchores rocks. We may treat as a variation of this pass the crossing over the summit of the *Râteau* (3,754 mètres = 12,316 feet) made by Monsieur Cordier in 1876. From La Bérarde or S. Christophe to Brèche du Râteau, between Etançons and Selle Glaciers, 6 hrs. (4): to summit by snow ridge, $1\frac{1}{2}$ hr. ($1\frac{1}{4}$): to Brèche de la Meije by difficult ridge, $2\frac{1}{2}$ hrs. ($3\frac{1}{2}$): thence, as above, to La Grave, 4.35 ($6\frac{1}{4}$): total, 14.35 (15).

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* The Refuge de l'Alp is $2\frac{1}{2}$ hrs. ($3\frac{1}{2}$) from La Grave by a good mule path.

moraine of Glacier du Clot des Cavales, the state of the glacier varying according to season, &c., $\frac{3}{4}$ hr. ($2\frac{1}{4}$): thence to Refuge de l'Alp, 1 hr. ($1\frac{1}{2}$): total, $6\frac{1}{4}$ hrs. ($6\frac{3}{4}$). Least fatiguing when taken from La Bérarde.

9. *Col de la Grande Ruine* (3,140 mètres = 10,302 feet). From La Bérarde to edge of torrent de la Grande Ruine through the Vallon des Etançons, $1\frac{1}{4}$ hr. (1): thence up rocky slopes to top of the moraine of Glacier de la Grande Ruine, 2 hrs. (1): thence by rocks on right bank of the glacier to the col, 2 hrs. (1): from col to moraine of Glacier du Clot des Cavales by glacier very much crevassed just below the col, 1 hr. (3): thence to Refuge de l'Alpe, 1 hr. ($1\frac{1}{2}$): total, $7\frac{1}{4}$ hrs. ($7\frac{1}{2}$).

10. *Brèche Giraud-Lézin* (3,598 mètres = 11,805 feet). From La Bérarde to top of the moraine of Glacier de la Grande Ruine (as in No. 9), $3\frac{1}{4}$ hrs. (2): thence by crevassed glacier to base of col, $1\frac{1}{4}$ hr. ($\frac{1}{2}$): thence by difficult and rotten rocks to col, $5\frac{1}{2}$ hrs. ($4\frac{1}{2}$):* thence by right bank to end of Glacier Supérieur des Agneaux, $\frac{3}{4}$ hr. ($1\frac{1}{2}$): thence by a *clapier* to Glacier de la Plate des Agneaux, $\frac{3}{4}$ hr. ($1\frac{1}{2}$): thence to Refuge de l'Alp, $1\frac{1}{4}$ hr. (2): total, $13\frac{1}{4}$ hrs. ($12\frac{1}{4}$). A difficult pass, best taken from La Bérarde. From the pass the *Grande Ruine* (3,754 mètres = 12,316 feet) may be ascended in half an hour by the northern arête without any difficulty.

11. *Col de la Casse Déserte* (3,510 mètres = 11,516 feet). From La Bérarde to top of the moraine of the Glacier de la Grande Ruine (as in No. 9), $3\frac{1}{4}$ hrs. (2): thence to col by steep and crevassed glacier, $2\frac{1}{4}$ hrs. (1): thence by short snow gully, névé, and débris to Glacier de la Plate des Agneaux, 1 hr. ($2\frac{1}{4}$): thence to Refuge de l'Alp, 2 hrs. ($3\frac{1}{4}$): total, 9 hrs. (9). Easy and very fine passage. From the col the *Grande Ruine* (3,754 mètres = 12,316 feet) may be ascended in 2 hrs. ($1\frac{1}{4}$) by a circuitous route leading to the northern slope of the S.E. ridge, and then up this latter.

12. *Brèche de Charrière* (3,261 mètres = 10,699 feet). From La Bérarde to the torrent of Charrière, in the Vallon de la Bonne Pierre, $1\frac{1}{4}$ hr. ($\frac{3}{4}$): thence to the Brèche by easy rocks and névé, 3 hrs. ($1\frac{1}{2}$): thence by long steep snow couloir, exposed to showers of stones, to level of Glacier de la Plate des Agneaux (time varies according to state of the snow), $1\frac{1}{4}$ hr. (3): thence to Refuge de l'Alp, $2\frac{1}{4}$ hrs. ($3\frac{1}{4}$): total, 8 hrs. ($9\frac{1}{2}$). It is by far the best plan to take this pass from La Grave. From the col the ascent of the *Tête de Charrière* (3,442 mètres = 11,293 feet) may be made in 50 ($\frac{3}{4}$) minutes.

13. *Col de la Roche d'Alvau* (3,010 mètres = 9,876 feet).

* Done under very favourable circumstances in $2\frac{1}{2}$ hrs. up. 'A. J.' x. 90.

M. Cordier in 1876 effected the first and (till now) only passage of this col. From Refuge de l'Alp to base of col, 3 hrs.: thence by difficult bergschrund, short ice wall, and easy rocks to col, $3\frac{1}{4}$ hrs.: difficult and steep rock wall to Glacier de la Bonne Pierre, 1 hr.: thence to La Bérarde by moraine and mule path, 2 hrs.: total, $9\frac{1}{4}$ hrs.

The next three passes lie over the great ridge projecting N.E. from the Roche Faurio, and are reached from the Glacier Blanc. As this glacier is accessible from La Bérarde by the Col des Ecrins, and as the passage of this double wall has actually been made by energetic climbers, I have thought it right not to omit these passes.

14. *Col de Roche Faurio* (3,470 mètres = 11,385 feet). From La Bérarde to Refuge de la Bonne Pierre by mule path to shepherds' hut in Vallon des Etançons, and thence by steep moraine, $2\frac{1}{2}$ hrs. ($1\frac{1}{2}$): thence by moraine and glacier to foot of couloir, $1\frac{1}{2}$ hr. ($\frac{3}{4}$): thence up the couloir (according to varying state of snow, though in case of need the difficult rocks of the right bank may be climbed, 3 hrs. (2): thence across snow-fields to Col de Roche Faurio, 1 hr. (1): thence down the great couloir, finally by the rocks on its right bank, $3\frac{1}{2}$ hrs. (4): from foot of rocks by difficult bergschrund and rock slopes exposed to stones, to end of Glacier de la Tombe Muréc, 2 hrs. (3): across Glacier de la Plate des Agneaux and thence to Refuge de l'Alp, 1 hr. ($1\frac{1}{2}$): total, $14\frac{1}{2}$ hrs. ($13\frac{3}{4}$). Except under the most favourable conditions, the descent of the great couloir on the La Grave side should not be attempted.

15. *Col Emile Pic* (3,502 mètres = 11,490 feet). From La Bérarde to Col des Ecrins, as in No. 14, 7 hrs. ($4\frac{1}{4}$): thence across snow-fields to Col Emile Pic, $2\frac{1}{2}$ hrs. ($2\frac{1}{2}$): down crevassed but easy glacier to its base, $1\frac{1}{2}$ hr. (3): thence to moraine of Glacier de la Plate des Agneaux, by bare slopes and polished rocks, 1 hr. (2): thence to Refuge de l'Alp, $1\frac{1}{2}$ hr. ($1\frac{1}{2}$): total, $13\frac{1}{4}$ hrs. ($13\frac{1}{4}$). This easy pass was formerly frequented by the country people, to whom it was known as the Col de la Plate des Agneaux. From the col the ascent of the *Pic de Neige Cordier* (3,615 mètres = 11,861 feet) may be made by W. face and S.W. ridge in 25 (15) minutes.

16. *Col du Glacier Blanc* (3,308 mètres = 10,854 feet). From La Bérarde to Col des Ecrins, as in No. 14, 7 hrs. ($4\frac{1}{4}$): thence by snow-fields to Col du Glacier Blanc, 3 hrs. (3): thence by shattered rock buttress, not altogether easy, to Glacier d'Arsine, $2\frac{1}{2}$ hrs. ($3\frac{1}{2}$): thence to moraine of Glacier d'Arsine by level glacier, $1\frac{1}{2}$ hrs. (2): thence to Refuge de l'Alp, $\frac{1}{2}$ hr. (1): total, $14\frac{1}{2}$ hrs. ($13\frac{3}{4}$).

FURTHER NOTES ON SARACENS IN THE ALPS. By the EDITOR.

SINCE writing my paper on the Saracens in the Journal for August 1879 several articles and works have come under my notice, of which I propose to give a brief account.

The first and most important of these is a book which seems to have escaped the notice of everyone who has recently written on the Saracens in the Alps. It is entitled '*Les Invasions des Sarrasins en Provence pendant le 8^e, le 9^e et le 10^e siècle, par G. de Rey,*' published at Marseilles in 1878 by Marius Olive, Rue Sainte, 39. The title page contains the following note: '*ouvrage qui a obtenu la médaille d'or de la Société littéraire d'Apt, au concours historique de 1877, lors du couronnement de Sainte Anne;*' and the bookseller's catalogue from which I first heard of this work adds to this description, '*pas dans le commerce.*' It is a small octavo book of 237 pages, and narrates, with references and '*pièces justificatives,*' the whole story of the Saracens in Provence, laying special stress perhaps on the sufferings the Church endured at their hands. Though not contributing any very important new facts relating to the sojourn of the Saracens in the Alps, it contains several interesting items, which will be enumerated later on.

The second book on the list is entitled '*Les Sarrasins dans les Alpes, par Charles Le Fort.*' It appeared at Geneva in the third number of the '*Echo des Alpes*' for 1879, and has since been reprinted separately.* I have to thank the distinguished author for a copy. M. Le Fort has given a very interesting résumé of earlier writings on his subject, but adds no new facts, and does not give any decided opinion as to the presence of the Saracens at Saas, remarking (p. 15), '*On ne peut guère s'attendre à une solution précise dans le sens positif ou négatif.*'

The third contribution on this subject is an article in the '*Jahrbuch des Schweizer Alpenklub. Vierzehnter Jahrgang, 1878-1879,*' (pp. 462-492), entitled '*Saracenen und Ungarn in den Alpen, von Dr. H. Düby (section Bern).*' This is a pleasantly written account of the doings of Saracenic and Magyar marauders in Switzerland. Some interesting details are given with respect to the plundering of the great Abbey of S. Gallen by the Magyars in 926. That part which relates the doings of the Saracens mentions a passage in Liudprand which I had overlooked, but is not remarkable

* Genève, imprimerie Bonnant, Rue Verdaine, 16 pages.

save for the extraordinary assumption (already noted by Mr. Freshfield) that 'Aquae,' which is described by Liudprand as 40 or 50 'miliaria' from Pavia, and in Dr. Düby's translation of the passage is rightly rendered by 'Acqui,' is identical with *Bormio*!*

Two other articles should be mentioned, both by Professor Edward Richter, of Salzburg. In that published in the second number of the 'Echo des Alpes' for 1880 the author goes beyond Mr. Freshfield, whom he is nominally supporting, in expressing his disbelief in any Saracen settlement in the Saas valley. But in the longer forms of the same article in the 'Zeitschrift des D. u. Ö. Alpenvereins,' 1880, No. 2 (pp. 221-230), he seems not quite so sure that the Arabic derivations are absolutely ridiculous. Both articles are written from a philological point of view, but add but little, if anything, to our previous knowledge.

I will now go on to note a few interesting items, for which I am mainly indebted to M. de Rey's little book. We read on p. 114, 'La chronique de la Novalèse nous apprend que les Sarrasins ruinèrent cette abbaye en 906; et celle de Saint-Dalmas de Pedone raconte qu'ils passèrent alors les Alpes avec deux armées, l'une qui par le col de Tende se porta sur le monastère et le détruisit, l'autre qui par un chemin différent atteignit Cluxa. Là les deux colonnes s'étant réunies, attaquèrent le comté de Bredulum, entre la Stura et le Tanaro, à l'ouest de Saint-Dalmas.' M. de Rey's reference is to a charter of Henry III., 1043, in which mention is made of the 'Comitatus Bredolensis, intra Tanarum et Sturiam.'† After some search I came across the chief original authority for his statement, which is the 'Acta' of S. Bernulfus, eighth Bishop of Asti, in Piedmont, who was martyred by the Saracens.‡ After describing the settlement of the Saracens at Fraxinetum, near Nice (i.e. on the Cap S. Hospice, near the present Villefranche), the writer (Philippus Malabayla) continues, 'Hoc igitur ex loco . . . Saraceni non tantum proximos vicos seu castra, sed Nicaeam ipsam, Sospel-

* Dr. Düby in the 'S. A. C. Jahrbuch' for 1880, p. 584, has withdrawn this curious identification, explaining at the same time that he was led into it by the note to his edition of Liudprand mentioning the river on which Acqui is built, the Bormida.

† 'Monumenta. Hist. Patr. Chartae,' tom. i. 553 (Turin). The same county is mentioned in other charters in the same collection, or in Ughelli, 'Italia Sacra,' vol. iv., dated 901 and 1064.

‡ 'Acta Sanctorum.' Martii, tom. iii. p. 488 (Antwerp edition, 1668).

lum, ceteraque loca intra mare et Apenninum primum depopulati, dein praedae dulcedine allecti Tendam petunt, ad radicis sitam Apennini: e quâ per Alpes, per viam Collam dictam illis imminuentem, in Subalpinam Italiam aditum patere conspicientes, novis subsidiis aucti ipsâque Collâ superatâ, in subjectam Ligurum Vagenorum planitiem descendunt' (i.e. they went by Nice, Sospello, Tenda, and the Col di Tenda to the territory of the Vagienni, a tribe which, according to Pliny, occupied the northern portion of the Maritime Alps, their chief town, Augusta Vagiennorum, being the modern Bene, between the Tanaro and the Stura). The Saint Dalmas de Pedone is the modern Borgo San Dalmazzo, between Cuneo and Valdieri (not to be confused with the Abbey of S. Dalmazzo, near Tenda, on the south side of the col of the same name), which is built near the site of the old Roman town of Pedona. The abbey, of which we hear first in 901, was in 1438 merged in the see of Mondovi. Now we find that the remains of S. Dalmatius were translated from Pedona to 'Quarguentum,' or 'Quarguento,' four miles from the modern Alessandria, by Audax, Bishop of Asti from 904 to 931 (or to 926, according to some writers). An inscription recording this fact exists, or existed formerly, at Quarguento on the tomb where the sacred relics reposed until their retranslation (except the head) to Pedona in 1174.* That this translation took place in consequence of the depredations of the Saracens is expressly asserted in the old Martyrology of S. Dalmazzo or Pedona: 'cujus (sc. S. Dalmatii) ossa ob depopulationem barbarorum a Pedonâ Quarguentum delata.'† The date of the crossing of the Maritime Alps is fixed at 906 by Durandi,‡ who places the sack of Novalese immediately after, thus agreeing with the author of the 'Life of S. Bernulfus,' who says that the Saracens built a tower (still standing in his time and known as 'Turris Saracina') near the spot where Mons Regalis (the modern Mondovi) was afterwards founded, and starting from that point sacked Alba and Novalese,§ to which Raymundus Turcus adds Asti.||

* Ughelli, 'Italia Sacra,' tom. iv. col. 345. Jacopo Durandi, 'Delle antiche Città di Pedona, Cadurro, Germanicia, et dell' Augusta de' Vagienni' (Torino, 1769), p. 54.

† Durandi, *op. cit.* pp. 50-51. Gioffredo, 'Storia delle Alpi Marittime.' Torino, 1839, vol. i. p. 552.

‡ Durandi, *op. cit.* p. 51.

§ 'Acta Sanctorum,' *loc. supra. citat.*

|| *Apud* Ughelli, *loc. citat.* col. 344. On their way to Novalese the Saracens attack Asti, and are beaten back, but coming on the victors

gation of Conrad of Burgundy, as related by Ekkehard of S. Gall; but M. Le Fort (pp. 11-12) follows the lead of the best authorities (Dümmler and Meyer von Knonau) in rejecting this tale.

An interesting survival of the deeds of brave Count William of Provence, the final destroyer of the pirate nest of Fraxinetum, is given by M. de Rey (p. 174), on the authority of Bouche.* 'Etc'est plus que vray semblablement dece Guillaume (sc. comte de Provence) que se doit entendre la défaite des Sarrasins près de la ville de Gap, faite par un comte Guillaume, qui en reconnoissance à Dieu pour sa victoire donna à l'église de Gap la moitié de cette ville, ainsi qu'il est porté dans le bréviaire de cette église, où en la cinquième leçon de l'office de S. Demetrius il est dit: "Cum Vapincensis civitas et terra circumposita a Sarracenis detineretur, quidam Guillelmus nomine, Deo adjuvante, devicit Sarracenos praedictos: qui quidem comes medietatem civitatis Vapincensis praedictae Deo et B. Mariae ipse et alii ejus consortes pro animabus ipsorum dederunt."'

M. de Rey essays to combine the very doubtful story of S. Bobo (pp. 177-183) (given in the 'Acta Sanctorum') with the equally fabulous tale of the deeds of Count Rotbald (in the chronicle of Novalesse), referring to the capture, not of the Fraxinetum on the 'golfe Grimaud,' but to another fort of the same name on the Cap S. Hospice, near the site of the modern Villefranche. But, to mention only one of innumerable difficulties, S. Bobo of Sisteron is not proved to be identical with the Bobo who, according to a vague local tradition, defended Nice in 970 against the Saracens.† M. de Rey, however, rightly identifies Count Rotbald with the brother of Count William of Provence, who was the first Count of Forcalquier.

M. de Rey refutes in detail (pp. 184-188) the notion that the Grimaldi had any part in the expulsion of the Saracens: the Viscounts of Marseilles are the real helpers of Count William, who gave them as a reward all the lands which had been usurped by the Saracens. M. de Rey also cites several cases of traces of the Saracen occupation of the Alps. The silver mines in the Valauria, near Tenda (now worked by an Englishman), not far from the mysterious rock drawings of the Laghi delle Meraviglie, were worked by Saracens, and a

* 'La Chorographie ou Description de Provence et l'Histoire de ce mesme Pays' (Aix, 1664), vol. ii. p. 44.

† Durante, 'Histoire de Nice' (*apud* De Rey, p. 183).

THE PASSES BETWEEN THE VALLEYS OF THE VÉNÉON
AND OF THE ROMANCHE.* By HENRY DUHAMEL.

IT has been often pointed out that the main mass of the Dauphiné Alps forms a gigantic horse-shoe, bounded on the north by the Romanche, on the east by the Durance, and on the south by the Severaisse, a tributary of the Drac. The drainage of the enormous fields of snow and ice which have accumulated within this horse-shoe is carried off by the Vénéon torrent, which has forced for itself a way out to the west. In the very centre of this group, at the head of the Vénéon valley, is situated the village of La Bérarde, above which soars the monarch of the French Alps proper—the Pointe des Ecrins (13,462 feet).

Keeping this general idea of the orography of the group in mind, it is easy to fix on the different spots outside the horse-shoe at which routes leading from the interior converge. Thus La Grave on the Romanche slope, Ville Vallouise on that of the Durance, La Chapelle en Valgaudemar on that of the Severaisse, are the points for which a traveller, desiring to escape from the Vénéon valley, must make, unless indeed he descend that valley till it falls into the Romanche valley in the plain on which stands Bourg d'Oisans. In the following pages I propose to indicate the various passages by which the northern or Romanche slope of the horse-shoe may be gained from any of the hamlets in Vénéon valley. I trust that the fact that in almost every case (the exceptions are always indicated) the estimate of the difficulties and length of the pass is based on my own personal experience may add to the value of my summary, as a common standard is thus attained, whereas it is often difficult, if not impossible, to compare passes the accounts of which are supplied by different climbers.

1. *Col de l'Alpe de Venosc* (1,620 mètres = 5,315 feet), mule track. From Venosc to Châlets de l'Alpe, steepish ascent, $1\frac{1}{2}$ hr. (40 min.): thence to village of Mont de Lans over level

* The passes across the lateral ridge extending S.W. from the Râteau (Brèche du Râteau, Brèche du Replat, Col du Replat, Col de la Gandolière, Col de la Selle) and those on the ridges running N. and E. from the Pic Oriental of the Meije (Col de l'Homme, Col Claire) are not included in this paper. The map—a revised edition of that published in the number for August 1879—is kindly presented by the author. The bracketed figures in the paper give the time occupied in traversing the same extent of ground in the *opposite* direction to that actually described.

Pe

gallery is still called 'la galerie Sarrasine' (p. 104). So, too, in the iron mines of La Ferrière, near Barcelonnette, in the Basses Alpes, where the dross cast aside by them after manufacturing their arms is still to be seen (p. 117). The distribution of lands after the expulsion of the Saracens marks the beginning of feudalism in Provence, hitherto kept back by the strength of the town (p. 191). The Saracens who were spared were probably reduced to a state of slavery. We find as late as December 15, 1250, Romeus de Villeneuve, one of the chief counsellors of Raymond Berenger V., Count of Provence, ordering in his will the sale of his Saracen slaves. 'Item volo quod omnes Sarraceni et Sarracenae de Villanová vendantur' (p. 192).

The interesting question as to the extent of the traces of the Saracens to be found in the Alpine region seems to have excited great attention in all the European Alpine Clubs. It can hardly be said to be yet exhausted. Speaking for myself, and with regard to the particular question of the occupation of the Saasthal by Saracens, no arguments I have hitherto seen have altered my opinion that such an occupation is very probable, although as yet by no means placed beyond doubt.

While disclaiming any intention to further call in question the probable visits of genuine Saracens to the Raetian Alps, it may not be superfluous to point out again the fact, that the mention of 'Saracens' in an old chronicle or on a map, is not in itself sufficient evidence of the visits of invaders of Arab race. I found proof of this, where least looking for it, last summer. The church at Etretat, the well-known watering-place between Havre and Dieppe, on the Norman coast, is built on a spot rendered sacred by local tradition, on account of a pious lady (St. Olive), having there taken refuge from *Saracens*. In illustration of this legend, Mons. l'Abbé Cochet, 'Directeur du Musée d'antiquités de Rouen, Inspecteur des monuments historiques de la Seine Inférieure,' &c., cites, in his work on 'Etretat, son passé, son présent, son avenir [pp. 63-7, 5th edition. Paris, Didron 1869; 2 francs], a dozen instances taken from 'beyond the Loire and the Seine, and even Belgium,' of caves, fountains, tombs, fields, buildings, attributed to 'Saracens.' He also quotes passages from old chronicles tending to the same conclusion, that in France, at any rate from the 11th century downwards, the term 'Saracen' was synonymous with unbeliever.

D. W. FRESHFIELD.

NOTES ON SOME PASSES IN THE FRENCH ALPS IN THE EIGHTEENTH CENTURY. BY CHARLES RABOT.

THE facts that the great peaks of the Dauphiné Alps do not lie on a political frontier, and that they are, to a large extent, masked in views by high secondary ridges, explain sufficiently the reasons why they have been so neglected until the last few years. Yet in the eighteenth century the Pelvoux *massif* was studied with some care, and we find mention of many passes, the discovery of which is generally attributed to a far later generation. This was due to the numerous wars of the time, the French Alps being the scene of many important military operations. Hence we have several '*Mémoires*' written by the *ingénieurs-géographes du roi* (a department created in 1691 by Vauban), which note with especial attention all the practicable passages across the rugged mountain barrier.

As early as 1678 the Col de la Temple, the Col des Estancons (? the Brèche de la Meije, or the Col des Cavales), the Col de la Milliande (or Mariande, or de la Haute Pisse), and the Col du Garansaul (which we have not been able to identify), are mentioned as the boundaries of the 'Communauté of S. Christophe en Oisans.' From 1709 to 1712 an *ingénieur-géographe*, named La Blottière, devoted himself to the study of the Dauphiné Alps.* According to him, the highest and more conspicuous mountains of these Alps are La Montagne de Malavalle (= the Meije), above and opposite the villages of La Grave and of Villars d'Arayne, upon which there is always much snow; and la Montagne de Lallefroide, above Val Louise, upon which there is a great deal of ice. Those mountains are all entirely inaccessible, because of the glaciers which date, it is said, from the Deluge. Another *ingénieur-géographe*, Montannel (c. 1777), adds that the ice is 'si ancienne qu'elle paraît aussi dure que du cristal.' The name of Lallefroide, or Tallefroide, or L'Ailefroide, includes, according to La Blottière, the whole range from the Pic des Agneaux, at the sources of the Romanche, to the Pic Bonvoisin, between the Val Louise and the Val Godemar. He also mentions the stream of La Pisse which rises at the foot of the Glaciers de la Montagne de Lallefroide, in view of Villars d'Arayne. Montannel means, by l'Ailefroide, the district between the Col d'Arcine and the Col du Haut Martin, and names this ridge the 'Montagne des Glacières ou des Verrières ou l'Ailefroide,' &c. In his description of the Val Louise, La Blottière speaks of the Col de la Grande Sagne, or de Lallefroide, above the village of La Pisse, which is difficult for foot-passengers, on account of the glaciers one must cross. This pass leads to Bourg d'Oisans, passing by S. Christophe. He clearly means the Col de la Temple. A later document puts the length of time required to make the passage at 9½ hours, and asserts that there was formerly a small path between the Val Louise and S. Christophe, but that it had become quite impassable during the last forty years, owing to the 'boulement des glacières.'

* His *Mémoires*, but without his name, are almost literally reproduced in M. de Pesay's work, mentioned below.

gallery is still called 'la galerie Sarrasine' (p. 104). So, too, in the iron mines of La Ferrière, near Barcelonnette, in the Basses Alpes, where the dross cast aside by them after manufacturing their arms is still to be seen (p. 117). The distribution of lands after the expulsion of the Saracens marks the beginning of feudalism in Provence, hitherto kept back by the strength of the town (p. 191). The Saracens who were spared were probably reduced to a state of slavery. We find as late as December 15, 1250, Romeus de Villeneuve, one of the chief counsellors of Raymond Berenger V., Count of Provence, ordering in his will the sale of his Saracen slaves. 'Item volo quod omnes Sarraceni et Sarracenae de Villanová vendantur' (p. 192).

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As early as 1678 the Col de la Temple, the Col des Estancons (? the Brèche de la Meije, or the Col des Cavales), the Col de la Milliande (or Mariande, or de la Haute Pisse), and the Col du Garansaul (which we have not been able to identify), are mentioned as the boundaries of the 'Communauté of S. Christophe en Oisans.' From 1709 to 1712 an *ingénieur-géographe*, named La Blottière, devoted himself to the study of the Dauphiné Alps.* According to him, the highest and more conspicuous mountains of these Alps are La Montagne de Malavalle (= the Meije), above and opposite the villages of La Grave and of Villars d'Arayne, upon which there is always much snow; and la Montagne de Lallefroide, above Val Louise, upon which there is a great deal of ice. Those mountains are all entirely inaccessible, because of the glaciers which date, it is said, from the Deluge. Another *ingénieur-géographe*, Montannel (c. 1777), adds that the ice is 'si ancienne qu'elle paraît aussi dure que du cristal.' The name of Lallefroide, or Tallefroide, or L'Ailefroide, includes, according to La Blottière, the whole range from the Pic des Agneaux, at the sources of the Romanche, to the Pic Bonvoisin, between the Val Louise and the Val Godemar. He also mentions the stream of La Pisse which rises at the foot of the Glaciers de la Montagne de Lallefroide, in view of Villars d'Arayne. Montannel means, by l'Ailefroide, the district between the Col d'Arcine and the Col du Haut Martin, and names this ridge the 'Montagne des Glacières ou des Verrières ou l'Ailefroide,' &c. In his description of the Val Louise, La Blottière speaks of the Col de la Grande Sagne, or de Lallefroide, above the village of La Pisse, which is difficult for foot-passengers, on account of the glaciers one must cross. This pass leads to Bourg d'Oisans, passing by S. Christophe. He clearly means the Col de la Temple. A later document puts the length of time required to make the passage at 9½ hours, and asserts that there was formerly a small path between the Val Louise and S. Christophe, but that it had become quite impassable during the last forty years, owing to the 'boulement des glacières.'

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gallery is still called 'la galerie Sarrasine' (p. 104). So, too, in the iron mines of La Ferrière, near Barcelonnette, in the Basses Alpes, where the dross cast aside by them after manufacturing their arms is still to be seen (p. 117). The distribution of lands after the expulsion of the Saracens marks the beginning of feudalism in Provence, hitherto kept back by the strength of the town (p. 191). The Saracens who were spared were probably reduced to a state of slavery. We find as late as December 15, 1250, Romeus de Villeneuve, one of the chief counsellors of Raymond Berenger V., Count of Provence, ordering in his will the sale of his Saracen slaves. 'Item volo quod omnes Sarraceni et Sarracenae de Villanová vendantur' (p. 192).

The interesting question as to the extent of the traces of the Saracens to be found in the Alpine region seems to have excited great attention in all the European Alpine Clubs. It can hardly be said to be yet exhausted. Speaking for myself, and with regard to the particular question of the occupation of the Saasthal by Saracens, no arguments I have hitherto seen have altered my opinion that such an occupation is very probable, although as yet by no means placed beyond doubt.

While disclaiming any intention to further call in question the probable visits of genuine Saracens to the Raetian Alps, it may not be superfluous to point out again the fact, that the mention of 'Saracens' in an old chronicle or on a map, is not in itself sufficient evidence of the visits of invaders of Arab race. I found proof of this, where least looking for it, last summer. The church at Etretat, the well-known watering-place between Havre and Dieppe, on the Norman coast, is built on a spot rendered sacred by local tradition, on account of a pious lady (St. Olive), having there taken refuge from *Saracens*. In illustration of this legend, Mons. l'Abbé Cochet, 'Directeur du Musée d'antiquités de Rouen, Inspecteur des monuments historiques de la Seine Inférieure,' &c., cites, in his work on 'Etretat, son passé, son présent, son avenir' [pp. 63-7, 5th edition. Paris, Didron 1869; 2 francs], a dozen instances taken from 'beyond the Loire and the Seine, and even Belgium,' of caves, fountains, tombs, fields, buildings, attributed to 'Saracens.' He also quotes passages from old chronicles tending to the same conclusion, that in France, at any rate from the 11th century downwards, the term 'Saracen' was synonymous with unbeliever.

D. W. FRESHFIELD.

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THE facts that the great peaks of the Dauphiné Alps do not lie on a political frontier, and that they are, to a large extent, masked in views by high secondary ridges, explain sufficiently the reasons why they have been so neglected until the last few years. Yet in the eighteenth century the Pelvoux *massif* was studied with some care, and we find mention of many passes, the discovery of which is generally attributed to a far later generation. This was due to the numerous wars of the time, the French Alps being the scene of many important military operations. Hence we have several '*Mémoires*' written by the *ingénieurs-géographes du roi* (a department created in 1691 by Vau- ban), which note with especial attention all the practicable passages across the rugged mountain barrier.

As early as 1673 the Col de la Temple, the Col des Estancons (? the Brèche de la Meije, or the Col des Cavales), the Col de la Milliande (or Mariande, or de la Haute Pisse), and the Col du Garansaul (which we have not been able to identify), are mentioned as the boundaries of the 'Communauté of S. Christophe en Oisans.' From 1709 to 1712 an *ingénieur-géographe*, named La Blottière, devoted himself to the study of the Dauphiné Alps.* According to him, the highest and more conspicuous mountains of these Alps are La Montagne de Malavalle (= the Meije), above and opposite the villages of La Grave and of Villars d'Arayne, upon which there is always much snow; and la Montagne de Lallefroide, above Val Louise, upon which there is a great deal of ice. Those mountains are all entirely inaccessible, because of the glaciers which date, it is said, from the Deluge. Another *ingénieur-géographe*, Montannel (c. 1777), adds that the ice is 'si ancienne qu'elle paraît aussi dure que du cristal.' The name of Lallefroide, or Tallefroide, or L'Ailefroide, includes, according to La Blottière, the whole range from the Pic des Agneaux, at the sources of the Romanche, to the Pic Bonvoisin, between the Val Louise and the Val Godemar. He also mentions the stream of La Pisse which rises at the foot of the Glaciers de la Montagne de Lallefroide, in view of Villars d'Arayne. Montannel means, by l'Ailefroide, the district between the Col d'Arcine and the Col du Haut Martin, and names this ridge the 'Montagne des Glacières ou des Verrières ou l'Ailefroide,' &c. In his description of the Val Louise, La Blottière speaks of the Col de la Grande Sagne, or de Lallefroide, above the village of La Pisse, which is difficult for foot-passengers, on account of the glaciers one must cross. This pass leads to Bourg d'Oisans, passing by S. Christophe. He clearly means the Col de la Temple. A later document puts the length of time required to make the passage at 9½ hours, and asserts that there was formerly a small path between the Val Louise and S. Christophe, but that it had become quite impassable during the last forty years, owing to the 'boulement des glacières.'

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Montannel, who writes at a still later period,* says, 'On dit que l'on pouvait communiquer autrefois par un petit sentier en neuf heures de tems de Ville Vallouise à S. Christophe, mais ce sentier ne subsiste plus. On ne peut véritablement entrer ni sortir du Vallon de S. Christophe que par la gorge qu'il présente au bassin d'Oysans, car pour les cols qui y déversent des vallées contigues, ils sont si rudes, si étroits et si mauvais qu'à peine un homme à pied ose-t-il y passer.' These statements suffice to show that at the end of the seventeenth and end of the eighteenth centuries the natives had a traditional knowledge of the Col de la Temple, the passage of which had been stopped by changes in the glaciers.

La Blotière also refers to the Cols de Leschauda, de la Chevalière (to Chantemerle in the Gusanne valley), and de Bonvoisin (from Val Louise to S. Bonnet by Entre-les-Aigues). A MS. map of the same date indicates the 'Col d'Orcines,' and a path between Venosc and the Valley of the Romanche, called by Montannel 'Col des Granges de Venosc.'

The 'Histoire des Campagnes de Monsieur de Maillebois en Italie pendant les années 1745 et 1746,' by the Marquis de Pesay (Paris, Imprimerie Royale, 1775), contains several additional details relating to the Pelvoux group. The Meije is now called 'Aiguille du Midy,' and we find all the names printed on Bourcet's map, *e.g.* Montagne de Dourounoure. The same writer mentions the following passes in the Valley of S. Christophe, as known in his time—the 'Col de Sais,' coming from the Mont Massivier by the right of the Valley of Conte Faviel, the 'Col de Muande,' by the valley of the same name (8 hours actual walking, Montannel tells us), and the 'Col de la Muzelle.' He winds up by saying that the Valley of S. Christophe is closed by glaciers to the east, west, and south.

The 'Mémoires' of La Blotière contain a long and artless description of the fauna, and of the customs of the inhabitants. In winter, he says, the peasants go from one valley to another with *raquettes* under the feet, like savages, without sinking into the snow. Already by the middle of the seventeenth century the Alpine districts of Dauphiné (according to Bourcet in his MS. 'Mémoires') had been so damaged by the rocks fallen from the slopes above that half of it was covered with stones, and more persons died by accidents than through natural causes. This ruin went on so swiftly that, as a charter of S. Christophe of 1718 says, the district was a solitude, the people flying from it in terror. In 1752 Bourcet addressed a report to the King on this migration, which he considers dangerous in view of a war between France and Savoy, and suggested that the capitation tax should be lowered in Val Jouvrey, Val Louise, Val Godemar, and in the Valley of S. Christophe.

It is quite superfluous to say anything about the history of the

* His *Topographie militaire de la Frontière des Alpes* has been published, with an interesting historical introduction on the topographical works relating to the French and Italian Alps, by the Commandant de Rochas d'Aiglun (*Documents inédits relatifs au Dauphiné*, published by the *Académie Dauphinaise de Grenoble*, 1875).

mountains of the Queyras and the Waldensian valleys after Monsieur de Rochas d'Aiglun's interesting pamphlet, '*Les Vallées Vaudoises: Étude de topographie et d'histoire militaire.*' (Paris: Tanera.)

The *ingénieurs-géographes* examined, and have described in their '*Mémoires*,' all the passes between the Mont Thabor and the Mont Cenia, which are of course of very great strategic importance; and mention by name the Montagne de Seguret (or Mont Ambin), the Rochemelon, the Chaberton, and the Tête Méande.* The Col de Girard, leading from the head of the Arc valley to Forno in the Val Grande di Lanzo, is spoken of under the name of 'Col de Grosse Cavale' (Groscavallo). The Col di Carro, leading over to the Val Locana, is referred to, though doubtfully; for Montannel and Bourcet call the pass between Bonneval and Ceresole, 'Col de la Galest,' and not by its modern name. Brunet de l'Argentière † thus describes the Col de la Galise, between Tignes and Ceresole: 'Le chemin est mauvais et il ne peut passer que des gens de pied dans la belle saison à cause des glaciers, de l'une desquelles sort un ruisseau qui forme la source de l'Isère. De Laval, dernier village de Tarantaise, à Cerisolles, premier du Piémont, il y a 10 heures de marche.' The passes between the Maurienne and the Tarantaise were known in the eighteenth century, e.g. the 'Isseran,' 'où il passe des chevaux et mulets chargés dans la belle saison,' the 'Col de la Vanoise' (Vanoise), in the neighbourhood of which the manufacture of Gruyère cheese was already important, owing to the luxuriant pasturage, the 'Col de la Loisse' ('on est obligé au sommet du col de passer sur une glacière pendant 200 pas,' writes Brunet), which was crossed by Victor Amadeus in 1708, with a *corps d'armée* on the way to attack Exilles and Fénestrelles, the 'Col du Palet,' the 'Col de Chavière,' and the 'Col des Encombres.' The Col du Mont was called the Col de Grisanche, and said to be unfrequented owing to the Little S. Bernard being so near. Montannel mentions the Cols de Cognes, du Glacier, and de Tignes. No details are given as to the first of these, and the two others are placed between the Col du Mont and the Little S. Bernard. 'Ils ne sont bons que pour les gens de pied, encore faut-il y passer dans le temps que la neige porte.' Both Montannel and Bourcet speak of the 'Col Major,' which the latter describes as 'col long et difficile. On ne peut se promettre de communiquer de Salanche et Chamonis (en Faucigny) à Morges dans le Val d'Aost en moins de deux journées de marche, et par des défilés considérables, où l'on ne

* This last probably is the Truc della Calabria, near Fénestrelles. M. de Rochas writes me that the spelling is Jalabrie, which means 'partridge.'

† He was *subdélégué* of the Intendant of Dauphiné, and in 1748 made a journey, in company with De Monteynard, 'brigadier des armées du roy, ayde maréchal des logis de l'armée,' amongst the mountains separating the upper Maurienne from Piedmont, and the Faucigny from the valley of Aosta. 'Ces montagnes,' he says, 'n'étaient connues que très imparfaitement, et les Mémoires que l'on a des routes et passages de ces montagnes du temps des guerres depuis et avant 1702 ne sont point exactes ny fidelles.' The title of his work (which is preserved in the archives of a private family, and for a copy of which I have to thank Monsieur de Rochas d'Aiglun) is entitled, *Mémoire sur les passages du Briançonnais dans la Haute Morienne Tarantaise et Fousigny de ceux de Savoie en Piémont et vallée d'Aoste.*

trouve aucune habitation.' 'Le Col Major,' writes Montannel, 'n'est plus susceptible de passage; les pluies et la fonte des neiges l'ont rompu . . . si l'ennemi (les Piémontais) accommodait le Col Major, qui est actuellement tout dégradé et impraticable, il pourrait venir par ce col de la Val Dost dans la vallée de Faussigny, mais ce chemin serait toujours des plus rudes, et praticable seulement deux mois de l'année, en sorte qu'il n'est guère à craindre que cet ennemi passe jamais par le Col Major dans l'objet de venir sur le Rhône en corps d'armée. . . . Le Col Major est entièrement ruiné; les habitants de Salanches m'ont assuré en 1769 qu'on n'y passait plus depuis trente ans.'

Descending the valley of the Bon Nant from the Col du Bonhomme, Brunet de l'Argentière writes: 'De ce pont (Pont de Tadiu) on arrive au village de Bioné, entre lequel et S. Gervais il y a un ruisseau qui grossit le Bon Nant et qui vient des glaciers qui le séparent de la Val d'Aoust, et qui règnent depuis le Col du Bonhomme jusqu'à Chamony, sans qu'il y aye aucun passage praticable pour traverser du Foussigny dans la Vallée d'Aoust: celui que plusieurs mémoires et cartes marquent de Salanches à Col Major et qui formait une branche de col de ce nom, parallèle à celle qui y va du Chapieu, n'existe plus depuis longtemps, ayant été bouché par les éboulements des glaciers.' Fifty-nine years before Brunet's visit to Chamonix, the pass had been already closed by 'grandes crevasses et interruptions qui se sont faits depuis bien des années.' *

Easy communication between Chamonix and Cormayeur has certainly never existed, but we can trace this legend for two centuries.

Brunet mentions that in 1748 there was a *glacière*, 400 feet long, between the Col du Bonhomme and the Plan des Dames.

ALPINE NOTES

EASTERN PEAK OF THE AILEFROIDE (? 12,600 feet), *August 25, 1880.*—Mr. J. Nérot with Emile Pic and Giraud Lézin made the first ascent of this peak. Starting from the Refuge Puiseux, in the Combe de Celce Nière, the route lay mainly up the S. face and arête over successive steps of rock and snow. Near the top a long and very steep snow couloir has to be cut up. The ascent from the glacier occupied about five hours' actual walking, and the descent as much or more, owing to the soft state of the snow in the couloir.

INSURANCE FOR GUIDES.—After some difficulties and delays, the Swiss Club have succeeded in giving effect to the suggestions made (perhaps for the first time) in this Journal three years ago [vol. ix. p. 49], for the establishment of relations between Guides and a sound Insurance Company, by means of which they might make provision against death or accident in the pursuit of their profession.

* Signor Vaccarone's article in *Bollettino del C. A. I.*, No. 41, page 34.

The following abridged Prospectus of the 'Gesellschaft Zürich' for this purpose, approved by the Swiss Club, is taken from a recent number of the 'Neue Alpenpost' (Zürich):—

The insurance extends to all accidents which may befall a licensed guide between June 1 and October 15, whether engaged in the exercise of his profession or not, except in the case of chamois hunting.

Policies are given for sums over 1,000 and under 4,000 francs, and cover the following cases:—

(1) *In case of Death.*

If the guide is married, the sum for which he is insured is to be paid to the widow and (or) children under sixteen years of age.

If unmarried, half the amount is payable to parents if in want, provided the insurer was their only wage-earning child; if they have other small children, the parents get only one-fourth of the sum.

(2) *In cases of Accidents resulting in Permanent Injury.*

If the guide is entirely disabled, the whole sum is paid to him. If only partially, half the sum.

If desired, an annuity can be granted, reckoned with reference to the amount of the sum insured, and the age of the insurer.

In case of dispute as to the degree of injury, the Insurance Company and the chief Cantonal Magistrate (Regierungs-Statthalter), or the Guides' Committee, are each to name a person, who are to elect an arbitrator.

(3) *Expenses in the case of illness, due to Accidents.*

In the case of accidents not entailing permanent injury, a daily allowance will be made of one franc per thousand of the sum insured, but not for longer than 200 days.

If the period of recovery exceed thirty days, this allowance is to run from the day of the accident; if under thirty days, no allowance can be made.

A medical man must be called in within eight days after the accident, and must give a certificate stating the nature of the injury and the probable time for which the guide will be incapacitated from work.

The premium is 8 francs per 1,000 francs of the insurance, payable thus:—

α. 5 francs per 1,000 by the guide, payable before July 31.

β. 2 " " by the Swiss Alpine Club.

γ. 1 " " by the Guides' Fund or other sources, payable on delivery of the policy.

All the sections of guides are to name a committee to collect these payments and to represent the guides with reference to the Insurance Company.

For 1881 a provisional arrangement has been made, by which the Bernese Oberland Guides, who have sent in their names, can procure policies, running from June 1; other guides can do so also before July 31. The guarantee of the central committee of the S. A. C. is good

only for the season of 1881. In future years the approval of the General Assembly of the Club will be required.

We are glad to learn that the advantages of the scheme have been quickly recognised by those whom it is intended to benefit. Before the beginning of the season 120 guides had already effected insurances for considerable sums.

THE FERNANJOCH ('A. J.' x. 165).—Herr F. Scharff, treasurer of the Frankfurt section of the D. u. Ö. Alpine Club, writes to say that on July 8, 1872, with Herr A. von Reinach, Urbas Loial being the guide, he effected the descent from this pass into the Windacherthal 6½ hrs. (including halts) from the pass to Sölden. Mention is made of this expedition, in vol. iii. p. 50 (cf. the *Sektionsberichte*) of the Zeitschrift of the Club, but no detailed account has ever been published.

LEONARDO DA VINCI ON THE RIGI!—Attention has already been called in this Journal (vol. viii. p. 356) to Leonardo da Vinci's drawings of mountain subjects. We take the following note from the *Gazette des Beaux Arts*: 'Leonardo da Vinci did not go to the East in 1473. We have here in facsimile a leaf in his writing dated in 1473, at the age of 21. Above the walls and embattled towers which frown over the precipice, beyond which a landscape with mountains, cascades, and streams stretches into the far distance, we can read certain words written from right to left, which may reveal a very interesting fact and explain the landscapes, rocks, and lakes which we find in some of his most famous pictures, though hitherto it has not been possible to ascertain with certainty if Leonardo had actually seen them with his bodily eyes. These words are as follows: "Di Santa Maria della Neve addi 5 agosto 1473." Now on the Rigi there exist the ruins of a chapel, called Notre Dame des Neiges, formerly resorted to by pilgrims; and it was precisely on August 5 that they came together.' Mons. Charles Ravaisson would have done well to remember that this dedication is found even among the basilicas of Rome, is a very frequent one both in the Alps and Apennines, and in itself proves nothing. He might also have ascertained without going further than Joanne's 'Suisse,' that the first chapel was built on the Rigi in 1689, and that the one now standing is by no means 'in ruins.' We trust, however, that Mons. Ravaisson's ill-success in this first conjecture will not discourage him and other critics from further and more fully considered attempts to identify the originals of Leonardo's mountain sketches, and that the keeper of the Queen's drawings at Windsor will be incited to answer the question we asked in 1878 by deciphering the writing on the sketches in his custody. We venture, however, to predict with great confidence that the originals of the 'rocks and lakes' in Leonardo's 'famous pictures' will be found on the shores of Lecco and the minor lakes of the Brianza, not on those of Luzern.

ALPINE ART IN THE EASTERN ALPS.—On the occasion of the marriage of the Crown Prince, the Austrian Alpine Club presented him with a memorial of their enterprise. This took the form of a picture, or rather series of pictures in one frame, by Adolf Obermüller, representing the various huts built by the Club. The centre is occupied by

an oil painting of the *Rudolfshütte*, by the shores of the *Weissesee*, in the *Kaisertauern*. The green lake studded with icebergs, shut in by rocky walls and watched by glacier-clad peaks, is very carefully painted. The rock drawing is remarkably firm in the outlines, though it fails to render the texture of the mass. The colour means to be true, and is no wise drawn from the artist's imagination. Grouped round this painting in the same frame are twelve smaller panels of white polished wood, which enclose pen and ink drawings of the following huts, the name of each being appended below it: *Wischberghütte*, near *Raibl*; *Stüdlhütte* on the *Gross Glockner*; *Riesenfernerhütte*, near *Taufers*; *Krainer Schneerberghaus*; *Kitzlochklamm*, near *Taxenbach*; *Glocknerhaus*, by the *Pasterze Glacier*; *Douglashütte*, on the *Lünersee*; *Kürsingerhütte*, on the *Grossvenediger*; *Simonyhütte*, on the *Dachstein*; *Hirzerhütte*, near *Meran*; *Koralpenhaus*, near *Wolfsberg*; *Lichtensteinklamm*, near *St. Johann im Pongau*. In work with the pen the artist is obviously at home; his rock drawing is intensely earnest, but he fails to render the weight of his glaciers or the softness of his snow-fields. The same artist sends a drawing of the *Gross Glockner*, which is quite appalling; the writer certainly has never seen it exactly from that point of view.

Zimmermann's oil painting of *Salzburg*, presented by that town, has a delightful mountain background. The colouring is most tender and the drawing of rock masses is excellent. The muscles of the hills may be seen and traced; they are not, however, unduly emphasised, sufficient only being given to prove that the artist has understood his subject and felt the weight and strength of the masses which he undertook to depict. The *Salzburg* rock with its green garment of wood occupies the middle distance, whilst a meadow rich with spring flowers, and children playing amongst them, stretches to the spectator's feet. *Fritsch's* picture of the *Dachstein* is again better in the drawing than in the colour, a feature which seems to characterise the work of Austrian Alpine artists, though the very opposite is usually the case with their figure painters.

W. M. C.

ALPINE PHOTOGRAPHS.—The Autotype Company has just published six views of *Chimborazo* and *Cotopaxi*, enlarged from negatives taken by Mr. *Whymper* during his recent journey. They are naturally of the highest interest to mountaineers. The most striking views are those of *Cotopaxi* (19,600 feet) taken from a height of 10,350 feet, and of the tremendous ice cliffs on *Chimborazo*. The latter view is remarkable as being enlarged from a negative which Mr. *Whymper* secured at a height of 18,500 feet, an elevation at which we believe no photograph has ever before been taken. The whole collection is an interesting souvenir of an undertaking which ranks as the most adventurous and most successful yet recorded in the annals of mountain travel.

The *lère* section of the French Alpine Club has just brought out the first of the four *Albums* they promise us—that illustrating the *Pelvoux* group. It includes no less than fifty admirably executed photographs, the points of view being very varied and excellently selected. We would call special attention to the panorama comprised in Nos. 30, 31, 32 from the *Grande Ruine* (12,317 feet), a peak which may be compared in several respects with the *Zermatt Breithorn*. No. 38 is a

magnificent reproduction of a portion of that marvellous rock wall which shuts in the Glacier Noir. The *Album* should be in the hands of all interested in or curious as to the district, and will, we hope, help to induce more travellers to explore the inexhaustible and wonderful beauties of the High Alps of Dauphiné. We are glad to learn that the *Album* (which is published by subscription; see 'A. J.' x. 170) has had such success in France that an additional number of copies has already been printed.

EXHIBITION OF PICTURES BY GENEVESE ARTISTS.—A considerable collection of pictures and enamels, the work of Genevese artists, has been on view during the past season in Bond Street. Most of the landscapes exhibited show technical skill, and a creditable desire to be faithful to the more obvious facts of nature. But there are few traces of the fine observation of colour and atmospheric effect required for success in painting the High Alps. What we have too generally reproduced is the crude and hard aspect which is the first to strike the tourist. Among the best of these somewhat matter-of-fact representations of green pastures and snowy mountains, are 'Mont Blanc from Les Voirons,' by Lemaitre; and the 'Jungfrau' and 'Lake of Engstlen,' by A. Lugardon. The mountain mists in Humbert's 'Wengern Alp,' are well painted, but the figures are out of keeping with the scene, and the picture as a whole is hardly satisfactory.

To a higher class of work belong a series of very charming water-colours, by Furet, mostly lake and spring scenes, in which the snows shine across blue waters or through the thin branches of a blossoming orchard—to our taste the most pleasing pictures in the exhibition. Excellent, also, in their way are two large and bold oil landscapes, by Vos, 'the Matterhorn,' and a view across the lake from Vevey in winter; in both of which local and peculiar atmospheric effects have been carefully studied. A bust of Topffer, the writer of 'Voyages en Zigzag,' by his son, will interest some visitors.

ALPINE MEETING IN WALES.—A number of members of the Alpine Club met at Bala, on the evening of April 22, and on the following day went up Aran Mawdddy, making the ascent of some steep cliffs on the eastern face of the mountain, and descending to Dolgelley, where twenty-eight members and friends dined in the evening. Mr. H. Walker, one of the Vice-Presidents of the Club, took the chair. The next day, the party made the ascent of Cader Idris from Llyn Cader by the cliffs of the northern face, and after descending to Llyn Cae, returned to Dolgelley over one of the eastern shoulders of the range.

SUMMER MEETINGS OF FOREIGN ALPINE CLUBS.—The village of Pralognan, in the Tarentaise, has been selected for the summer meeting of the French Club. On August 13 the members will assemble at Moutiers, spend Sunday morning at Brides les Bains, and enjoy a 'banquet' at Pralognan the same evening. The 15th will be devoted to the ascent of the Grande-Casse, 12,668 feet, or humbler excursions. Members of foreign clubs intending to be present, are invited to send their names to the secretary of the Tarentaise Section, Moutiers (Savoie). Pralognan is reached by road from Albertville or on foot by several passes from Modane.

The Italian Club will hold its annual meeting at Milan on August 29 and the following days. An excursion will be made on September 1 and 2 to the Lake of Como and the Grigna. Members of foreign clubs intending to be present should call at the rooms of the Milanese Section, 4 Piazza Cavour, on August 29.

REVIEWS AND NOTICES.

Jahrbuch des Schweizer Alpenclub. Sechszehnter Jahrgang, 1880-81.
(Bern: Dalp.)

The sixteenth volume of the 'Swiss Jahrbuch,' contains the usual mixture of papers from the special club district of the year—this time the extreme wing of the Bernese Alps between the Rawyl and the Rhone—and independent excursions. The former are in proportion fewer than usual, perhaps owing to the comparatively unexciting nature of the special field. Professor Renevier writes on its orography, Professor Favrat on its botany, Dr. Bugnion on its insects, while four other short papers are devoted to excursions, including a *seventh* way up the Wildhorn.

The following is a list of the independent excursions:—Dr. Petersen, 'Monte Viso;' Dr. Dübi, 'Experiences in the Bernese and Valaisan Alps;' E. von Fellenberg, 'Topographical and Geological Notes from the Baltschiederthal;' Schweizer, 'The Jupperhorn;' Dr. Ludwig, 'A New Ascent of Piz Bernina;' Professor Heumann, 'Excursions from the Bernina Hospice;' Dr. Minnigerode, 'Monte Zebbru;' O. von Pfister, 'Excursions in Montafon.'

Lovers of adventure will turn to Dr. Dübi's terse and spirited accounts of his attacks on the Mittaghorn Bietschhorn Dom and Matterhorn; the old hut on the last mountain he condemns as 'unspeakably uninhabitable.' The Swiss Club has made a handsome contribution to the new hut lower on the mountain. Perhaps the most exciting paper in the volume is Dr. Ludwig's account of his rash attempt to force a new way up the lower part of the face of Piz Bernina to the west of the great icefall. For long the climbers were forced to cut steps in a narrow chimney immediately overhung by a threatening mass of séracs, to force a way through which to safety on the snowy brow above taxed even Hans Grass's powers to the utmost. The horrors of the situation were added to by the piteous mewings of a kitten, which the porter carried on his back—for scientific purposes. Dr. Ludwig having read that cats cannot support rarefied air—they are said to be not only unable to catch mice, but afflicted with a kind of St. Vitus's dance, in the high cities of the Andes—he determined, by way of experiment, to convey a kitten to the top of Piz Bernina. The animal showed no signs of suffering beyond a loss of appetite and sense of cold. As Dr. Ludwig admits, the experiment was hardly a conclusive one, and he proposes that climbers should leave cats in the huts they visit, and call for them again in a few days. We venture a supplementary suggestion. On their second visit they might test more conclusively

their cat's condition, and combine sport with science by taking up a brood of rats or mice!

Professor Heumann's excursions include an exploration of the neglected mountains of Val Viola, lying between the Bernina and Orteler groups.

In the literary section, Professor Rutimeyer gives an interesting sketch of the 'History of the Study of Glaciers in Switzerland.' At another time we may show that it was owing in a much greater degree to the work of Swiss savants than (as is generally stated) to the writings of Rousseau, that the first tide of 'visitors to the glaciers,' was turned on the Alps towards the end of the last century. Herr Meyer von Knonau contributes a lengthy sketch of a now almost forgotten Alpine artist, Ludwig Hees (1760-1800). The best collection of his works is to be seen in the rooms of the Künstler Gesellschaft at Zürich. Dr. Dübli sends a paper on 'The Campaigns of the Romans in the Alps.' Finally, Placidus a Spescha's amusing descriptions of his first ascent of Piz Valrhein in 1789, and of his last two attempts on the Tödi, are, for the first time, printed from his MSS.

The usual short notices and reviews are followed by the Proceedings, this year of unusual interest, inasmuch as they record the Battle of the Rhone Glacier, which resulted after a close division, in the vote of a large sum of money towards the carrying on of Mr. Gosset's elaborate survey,* in accordance with the project agreed on between the Federal staff and the Club committee. During the past year no less than 620*l.* has been paid out of the Club chest to this undertaking, which will be watched with great interest by scientific observers throughout Europe, and has already stimulated some Viennese members of the German Club to set on foot a similar project. An annual contribution of 40*l.* has also been made to the meteorological station on the Sentia. The volume is completed for the first time by an Index, an addition for which all readers will be grateful to the editor, Herr Wäber, whose name we are sorry to miss among the contributors.

The 'Artistic Supplement' is, as usual, full and valuable, but, we think, rather from a topographical than an artistic standpoint. The lithographs bound up with the volume are not attractive to eyes accustomed to Mr. Whymper's woodcuts; nor in the smaller panoramas do the chalky blue hue in the sky and the dun tints on the mountains add much to the picturesque effect. But the large panorama from the Alvier, a summit of 7,752 feet, between the Lake of Wallenstadt and the Rhine, is a most elaborate and well-executed piece of mountain drawing. Its success is greatly due to firm outline having been set before colour in the reproduction. The maps of the Klub-Gebiet are, as usual with the work of the Federal Staff, above praise. Would that the map-makers of other countries might imitate the beautiful as well as clear and accurate style of this admirable survey! The whole volume bears testimony to the enlightened spirit and practical energy of the managers of the Swiss Club, as well as to the excellent use made by them of the very considerable income at their disposal.

D. W. F.

* See *A. J.*, vol. ix. pp. 43 and 500.

Echo des Alpes. Publication des Sections Romandes du Club Alpin Suisse, 1881. (Geneva: Jullien & Cie.)

This quarterly journal is also published with the authority of the Swiss Alpine Club, for the benefit of its French-speaking members, and aided by a yearly subvention of 1,000 francs. The first number for 1881 contains an unusually interesting article by Professor Forel on the 'Movements of Glaciers.' The fastest glacier on record is the Jakobshavn Fiord Glacier, in Greenland, which advanced 19·5 mètres a day in 1875. The slowest is the Rhône Glacier, which, according to Mr. Gosset, from 1879 to 1880 only made 0·3 of a mètre a year. Last year the glaciers of the Central Alps were generally in retreat. Since 1875, however, some degree of improvement has been visible. In that year the Glacier des Boissons; in 1879 the Schali Glacier, those of Zigiorenove, de Bois, and de Trient; in 1880 the Oberaur and Gietroz Glaciers began to gain ground.

The hypothesis the writer desires to prove is that 'the principal cause in the variations of glaciers is the rate of their motion, not the amount of waste.' We have stated, in other words, the same opinion below (see p. 286).

D. W. F.

Manuel du Voyageur. Par D. Kaltbrunner. (Zürich: Würster & Co., 1879. 20 francs.)

This book contains in 762 pages (with an appendix of nine very useful tables of formulæ, money, weights, measures, etc.), a vast number of useful hints for travellers who wish to make a study of a country or of its inhabitants. Many of these might be laid to heart by Alpine climbers, and would thus lighten the work of those who have to compile narratives of their wanderings, and add to the interest of their trips both prospectively and in remembrance. The directions as to how to map an unknown district and how to describe it from a geological, zoological, and botanical point of view, strike us as the most valuable parts of the work, though the suggestions as to the mode of ascertaining and studying the manners and customs of the people for the purposes of sociology are very good. It cannot be too often repeated that no one can thoroughly enjoy a journey, extending beyond the limits of a mere holiday trip, unless he has some more definite object in view, than desire for change of scene and a search after harmless adventures.

Aide-mémoire du Voyageur, notions générales de Géographie Mathématique, de Géographie Physique, de Géographie politique, de Géologie, de Biologie, et d'Anthropologie à l'usage des Voyageurs, des Étudiants, et des Gens du Monde. Par D. Kaltbrunner, &c. (Zürich: J. Würster & Co., 1881. 13 francs 50 cent.)

This work forms a supplement to the 'Manuel.' Its title explains its sufficiently large field. It may be compared to half a dozen of the little treatises which have lately issued from the London press, bound up in one. It bears the comparison not unsuccessfully. It appears to us, representing the unscientific reader, as commendable for compression and lucidity of statement, breadth of view, and balance of judgment between conflicting theories. See, for example, the brief passage on the various

agencies employed in the formation of mountains as we now have them ; or the pages given to the problem of the first appearance of man on our planet. The political instruction as to our own islands is not always accurate in detail. It is, however, obviously impossible, in the space at our command, to do more than bear testimony to the general merits of the work and call notice to some small slips in our own branch of knowledge—*orography*.

In the list of European mountain chains (p. 51) 'Mont Blanc' and 'the Alps' are separately mentioned. This is misleading, as there is a separate list of individual peaks. Among the European chains the Sierra Nevada is left out ; among the North American by an odd chance the Californian Sierra Nevada shares the same fate. The New Zealand Alps are also omitted. A complete ascent of Chimborazo is attributed to 'Humboldt and Bonpland.' This is incorrect, but we must refer our readers to Mr. E. Whymper's paper. The 'Maruch Pass' only is given in the Caucasus, whereas the Mamisson and Krestowaja Gora are lower and more important. It is extremely doubtful whether the great chasm on the north-east side of Ararat is a crater, it is more probably the result of an earthquake. The highest point reached in the Himalayas was not the *Schlagintweits* on Ibi Gamin but Johnson's (22,300 feet). We are disposed to question the statement that the Mediterranean basin (e.g. Asia Minor) shows traces of any change of climate in historic times beyond such as would be caused by the destruction of forests. It is not so much 'growing dryness,' as misgovernment, which is ruining these countries. We miss any adequate treatment of the minor oscillations of glaciers in historical times. Nor can we agree (p. 412) that 'the retreat or advance of glaciers does not depend absolutely on climate.' Observation will probably establish the conclusion that the movements of glaciers depend on the supply they receive at their head and the waste they undergo at their base, and that the former is by far the most effective agent. A series of snowy winters will be found in due time to set all the glaciers whose basins receive the snowfall on a forward march, which hot summers may retard but will not check.

We should add that the numerous maps and diagrams are admirably executed, and the type and paper of the volume pleasant to the eye. A volume of 500 pages could scarcely be produced in a more compact and handy form.

D. W. F.

Les Vacances du Lundi. Tableaux de Montagnes. Par Théophile Gautier.
(Paris : Charpentier, 1881. 3 francs 50 cents.)

This little volume, composed of *feuilletons* contributed to a Paris newspaper by one of the most justly famous of modern Frenchmen, deserves a welcome from mountaineers.

One heresy it ought to set at rest. No one who has read it can afterwards maintain that an artistic temperament is any bar to a love of the Alps. Théophile Gautier was as essentially an artist, an artist of the widest sympathies, as Mons. Taine is essentially a critic. Yet his only difficulty—as he more than once tells us—is to find language adequate to express his admiration for the mountains : he lingers over every detail of their form as carefully as if they were Greek statues or

ideal women; he ransacks the vocabulary of the studio, and even of the toilet, to find words by which to do justice to the delicate tints of their frail aerial robes of cloud and light and shadow.

It is entertaining to find this brilliant man of letters setting himself to fulfil 'consciencieusement ses fonctions de touriste.' Never, we are disposed to think, was there so conscientious a Parisian! He is at immense pains to make clear to us all the details his countrymen generally pass over. The dinners he ate, the dear bills he paid, the mules he rode, the weather he encountered, even the exact position and names of the mountains he went amongst are all chronicled. However concise he chose to be in poetry, in prose the author of '*Emaux et Camées*' had no fear of being diffuse. Whatever his subject, he did not spare words, if by their use he could make his reader share his sensations. He was so sure of being an artist himself that he felt he could put forward the artistic essence of his subject, and where beauty abounded he would not pass on until he had tried to say the last word in expressing it. It is given to few writers to do this without either becoming simply prosy, or else falling into overstrung and unbalanced rhapsodies such as first cloy and then sicken the readers of Ouida's descriptions of Italian nature. Gautier succeeds where the many fail. His pictures of Mont Blanc from Sallenches, of morning in the Vispthal, of clouds on the Furka, of night on the Riffelberg, are so true, so delicate, and so sympathetic, that we readily forgive the slight error by which in the last a full moon is made to *rise* behind the Matterhorn!

We have no space to quote; it is enough if we can find room for the reflection which follows a picturesque description of the return of a young member of the Alpine Club from the Matterhorn to the Hotel Mont Rose at Zermatt:—

'Quoique la raison y puisse objecter, cette lutte de l'homme avec la montagne est poétique et noble. La foule qui a l'instinct des grandes choses environne ces audacieux de respect et à la descente toujours leur fait une ovation. Ils sont la volonté protestant contre l'obstacle aveugle, et ils plantent sur l'inaccessible le drapeau de l'intelligence humaine.'

Here is a new version of *Excelsior* which we commend to our after-dinner orators in search of a sentiment.

D. W. F.

ITALIAN BOOKS ON VAL D'AOSTA.—Signor Corona's name is in itself a strong recommendation, and the little handbook * that he has recently published to the Val d'Aosta, his favourite hunting ground, will prove of great use to travellers in those regions this summer. It gives very full details, based on the most recent information, of all the excursions and ascents which may be made from Gressoney, Châtillon, Val Tournanche, Breil, Aosta, Cogne, and Courmayeur. Appended are several useful tables of measures and weights and a concise index to the local flora. Though it does not claim to supersede Gorret and Bich's guide, it will be found perhaps more useful in purely

* Giuseppe Corona, *Manuel de l'Alpiniste et de l'Excursionniste dans la Vallée d'Aoste*. Imprimerie Romaine. Rome: 1880-1.

Alpine work, and its convenient size will doubtless help it to obtain the success to which it is in every way entitled.

The interest of M. Mellé's tract* lies principally in the 'Notes' which fill the latter half of it, and which relate to various historical events of which Val d'Aosta has been the theatre, or to the visits of different distinguished persons. Some interesting remarks as to early pas-

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tz (4300 m.) *Monte Leone. Fletschhorn. Rossbodenhorn. Laquinhorn.*



† See the picturesque legend of St. Gall, Milman's 'Latin Christianity,' vol. ii.

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the Church became also fathers of mountaineering. Chamonix, it is true, boasts no climber among its monks. But the religious houses of the Great St. Bernard, the Simplon and Engelberg each produced the conqueror of their tutelary peaks, Mont Velan, Monte Leone, and the Titlis. Parish priests have been equally distinguished in our craft. The names of Carrel of Aosta, of Chamonin of Cogne, of Gnifetti of Alagna, of Imseng of Saas, of Senn of the Eitzthal, are household words to every well-read mountaineer.

Disentis can lay claim to the man who takes without question the first place among early clerical mountaineers—Pater Placidus a Spescha. De Saussure ranks higher as a man of science. With his advantages in education and environment he could hardly fail to do so. But, regarded as a climber and explorer, Pater Placidus deserves precedence among the mountaineers of the eighteenth century. Not that he was a ‘mere climber’ in the modern sense of the phrase. If he was made a monk by circumstances he was born a scientific student. But he never overcame the disadvantages attendant on the career of a peasant’s son brought up in a remote canton, and still further cut off from the cultivated world by having for his native tongue a Romansch dialect, so that to the end of his life his German remained harsh and incorrect and his style rugged.

In these days, when mountaineering has become a recognised pursuit throughout Europe, no apology is needed for giving in some detail a sketch of the life of one of its founders. The following pages are in part based on the chapter which the late Professor Theobald, of Chur dedicated to his fellow-countryman in his work on the Bündner Oberland.*

Placidus a Spescha was born of a yeoman family in the Vorderrheinthal† in the year 1752. As a boy he aided to tend his father’s flocks and herds on the neighbouring alps. At an early age he showed an exceptional passion for out-of-door mountain life. In his constant scrambles over rocks and hills his strength and agility were remarkable; so that, the boy’s birthday falling under the sign Capricornus, it became a family joke in his home that he had been born a climber. He gave

* Chur, 1861. The upper valley of the Vorderrhein is named the Bündner Oberland, to distinguish it from the Bernese Oberland. It corresponds with the Oberer or Graue Bund of the Three Leagues, the territory of which forms the modern canton Graubünden.

† It would appear from his own note to a MS. work on the Urserenthal that his family came from Andest, and that he was presumably born there (‘S. A. C.,’ Jahrb., vii. 477).

early signs of mental as well as bodily activity. He came home from his excursions with his pockets stuffed with crystals, mineral specimens and natural curiosities of all sorts. These it was his pleasure to arrange as best he could on his shelves. This habit led the boy to speculate on the wonderful powers which had produced not only the shining facets of his crystals, but the mountains themselves. Unfortunately there was no one at hand to offer any intelligible explanation of the marvels which surrounded him, or to set the would-be student on the path of scientific research.

Spescha's motives for embracing the monastic profession and entering the house of Disentis are unknown to us; but we may assume with tolerable certainty that not the least influential among them was a thirst for knowledge—and for the means to it, books—of which to the young peasant of the Oberbund the Church must have seemed to hold the keys. In his twenty-fourth year (1776) he was sent to the great monastery at Einsiedeln to complete his studies. Here a new mental life opened before him. He found at his disposal a well-stored library, collections of antiquities, cabinets of minerals. Better than all these, he found among the brothers several active and learned men able and willing to direct his studies. Of one of them, Moritz Brodhagen, Spescha spoke afterwards as the best of all his teachers.

At the end of six years, in 1782, he returned to Disentis with the intention of prosecuting his studies and enlarging his collections. His strength of character at once showed itself. His unusual acquirements and sound judgment gained him such influence among the monks that the management of the convent fell almost completely into his hands. The too common sequel ensued. Some of his brethren could not endure his superiority, and had recourse to the habitual weapon of small minds. They took advantage of Spescha's scientific attainments and wide views to attempt to fix on him the reputation of a free-thinker. His researches in natural science were represented as not only unprofitable, but unorthodox. In this respect his enemies did him, in the eyes of reasonable men, singular injustice. He was doubtless opposed in his heart and intellect to the mass of prejudice, superstition and blind zeal for unintelligible dogmas which make up the religion of the average recluse; but he was fond of repeating that it was to his study of nature that he owed his highest conceptions of the wisdom and goodness of the Creator. He was, moreover, conspicuously punctual and conscientious in the performance of all formal religious or monastic duties.

It was at this time—writes Professor Theobald—that the works of the Genevese *savants* De Luc and De Saussure, together with the pastoral poems of Haller, came into Spescha's hands, and gave a fresh spur to his studies by showing the importance attached by the keener intellects of the time to natural research and the illimitable importance of the results to be obtained from it in every branch of human knowledge. His disposition, however, was not one which could rest content in unbroken literary pursuits and a sedentary cloister life. At every opportunity he escaped from those who were only in name his brethren to his childhood's friends, the mountains. At this period—that is, before 1793—he made most of his principal ascents.

The eventful year 1799 rudely broke the peace of the Rhætian Highlands. Spescha, by birth a republican and at heart a democrat, had been well disposed to the principles of the Revolution; but, in common with its English sympathisers, he had recoiled from the results of the Terror in Paris, and he must have been roused to indignation by the deeds of the French troops in Unterwalden, where in 1798 they destroyed, with a cruelty which no Habsburg had ever approached, a republic compared to which their own was as a mushroom to a forest pine. His desire and aim was that by a strict neutrality the Graubünden might escape the tyranny and desolation which had overwhelmed the neighbouring republics. Such hopes, however, were speedily disappointed. In 1799 the whole of what is now Eastern Switzerland became the marching ground of armies, French, Austrian, and Russian. In March of that year the French laid the heavy fine of 100,000 francs on the convent of Disentis. Spescha gave up his valuable collection of minerals, with all his other curiosities, to aid in raising the sum.

When a further impost was laid on the convent Spescha was sent to Chur, to endeavour to obtain some reduction of the fine as well as the release of several of the monks, whom Massena proposed to send as hostages to France. He was completely successful, the impost being diminished by 20,000 francs. But, in place of thanks, he was met on his return to his brethren with the imputation that his success had been due to his Jacobin sympathies. When, early in May, a second rising against the French broke out in the Oberbund he was absent. After endeavouring in vain to prevent the advance of the patriots who were marching down the valley, he took refuge at Lugnetz. Thence he made his way across the mountains to Disentis, to find on his arrival that the French

had reduced the convent and village to a mass of smoking ruins, and that all he most valued—his books, writings, and remaining collections—had been plundered or destroyed. Spescha, with half a life's labour gone and nothing but his staff in his hand, wandered back to Lugnetz, and found for some months an asylum with the parish priests of Vrin and Rumein.

Meantime the Austrians recovered the upper hand in the mountains. One day Spescha, who had come down to Trons on business, was seized and delivered to the imperial authorities by some of the very men whom he had saved from being sent as hostages to France. He was sharply examined on a sermon he had lately preached on the text 'Put not your trust in princes,' which was supposed to have been directed specially against the Emperor. He was subsequently sent as a prisoner to Innsbruck, where he remained for eighteen months a guest in the Servite monastery. This period of captivity proved one of the happiest of his life. He made many valuable acquaintances, and was allowed sufficient liberty to explore the neighbouring parts of Tyrol.

On his return to his native valley and his own convent his troubles recommenced. The Roman Church having herself gone through the fires of persecution, holds it her duty, where she has the power, to see that those who wish to present any new truths to the world shall not miss this valuable portion of her experience. It is only when she has done her worst in vain against new knowledge, that she ceases to denounce it as heresy. Spescha had to bear trials similar to those which have befallen many greater, or more famous, men. He had returned to his scientific pursuits, was engaged in renewing his collections and in committing to writing his experiences and theories. The jealousy of his superiors was aroused. His books were taken from him, writing was prohibited to him, and even his mountain wanderings forbidden. This vexation cost Spescha a serious illness. He recovered, and sought for a refuge in the parochial duties of some distant hamlet. After several changes we meet him established in 1821 at his native place, Trons. There he found himself at leisure to compose most of the manuscripts which still remain to us. The remainder of his life was more peaceful. An old man of seventy, he returned to the assault of the mountains, which he professed to have given up a quarter of a century before, and made his two final attempts on the highest peak of the Tödi.

He died in his eighty-third year, in 1835. His last words were, 'Jetzt fällt die Barracke zusammen.'

The fragments of Placidus a Spescha's writings which have found their way into print, coupled with the testimony of Herr Theobald as to the mass of his manuscripts, are sufficient to enable us to form a just estimate of the character of the author. He had some touch of the true humour which is founded on a broad philosophical view of life.

The following passage, written at Trons when he was seventy years old, is characteristic of the man :—

‘When I carefully consider the fortune and ill-fortune that have befallen me, I have difficulty in determining which of the two has been the most profitable, since a man without trials is a man without experience, and such a one is without insight. *Vexatio dat intellectum.* For my part, speaking honestly, I must acknowledge that my ill-luck has been more useful to me than my good, since by the first I have gained more knowledge of God, of my neighbours, and of myself. In my opinion the true fortune of man in this world lies in right thinking and acting, acquiring knowledge, and preserving a clear conscience.’

When the painter Herr Isenring turned tail on the Tödi Spescha writes: ‘This was the most vexatious of all my expeditions; but it was not, perhaps, wholly unprofitable, since it taught me this lesson: that in the choice of companions for a mountain expedition one cannot be too particular.’*

As a mountaineer he was very much before his age. In the ascent of the Stockgron he used both rope and ice-axe. The difficulty of his life was that he could not get capable companions to carry out the expeditions he planned. Our materials for estimating his position as a man of science are inadequate. Professor Theobald sketches as follows his theory as to the origin of the Alps:—‘He believed that the materials of the mountains had been originally put together or formed under water, that they had been raised by subterranean energies in huge masses, and that their present configuration is due to erosion.’ His views on geology are said by the same writer to be expressed with clearness and originality. Even where the theory is no longer tenable the observations may still be found instructive. The same is said of his writings on glaciers, meteorology, and kindred topics. The qualities of the intelligent traveller—keen study of nature, accurate topographical observation, appreciation of the mountain people and the details of their lives—are never wanting in his writings. The

* Theobald, p. 70.

maps drawn by the eye alone are pronounced marvellously accurate.

His writings, could they have been brought together and published in his lifetime, would have doubtless formed a valuable contribution to science. But no such good fortune awaited them. The larger part of his manuscripts and curiosities perished, as I have already shown, in the burning of the Convent of Disentis in 1799. The fate of the collections made subsequently to this event it is not now possible to ascertain. Some of the crystals are probably in the collection at the Cantonal school at Chur.

It is stated as a fact that soon after his death part of his manuscripts were burnt at Trons by some ignorant bigot. The chief remaining manuscripts are in six volumes in the possession of the Historical Society of Graubünden, and in two others belonging to the late Caspar Latour, the contents of which are mostly a repetition of the former six. It was Spescha's custom to write duplicate copies.

A fragmentary manuscript in the possession of Herr F. von Salis at Chur was published in vol. x. pp. 33–42 of the 'Jahrbuch' of the Swiss Alpine Club. It enumerates and partly describes the passes in the Bündner Oberland. With it was given Spescha's portrait, as the pilgrim of nature, equipped for the mountains, with his staff in his hand and his wallet on his back. In the fifth 'Jahrbuch' of the Swiss Alpine Club a paper on the 'Climate of the Alps' has been reprinted; in the seventh extracts are given from a MS. 'Account of the Urserenthal;' and lastly, in the sixteenth, a wish I had expressed was promptly fulfilled by the publication by Pfarrer Herold of Spescha's original accounts of his ascent of Piz Valrhein and his fifth and sixth attacks on the Tödi. None of his MSS. were published during his life. He was a contributor, however, to the 'Isis: eine Wochenschrift von deutschen und schweizerischen Gelehrten,' Zürich, 1805.*

How comes it, the reader may ask, that the fruit of the lifelong labours of so energetic a spirit was wasted? The answer would appear to be that during his life Spescha (like many true students) shrank from publication from a fear of prematurely committing himself to conclusions which further research might modify. After his death there was no one to interest himself in the MSS., and few (except the friends to whom he had entrusted duplicate copies) knew of their existence. To edit them, moreover, demanded probably more scientific know-

* See 'Alpina,' vol. i. p. 386.

ledge than those who had them in their keeping possessed. Thus the time for making them public was allowed to pass. As far as facts, historical or natural, go, the MSS. are still valuable; but, as far as theories are concerned, the advance of knowledge in the present century has rendered obsolete many speculations or conclusions which at the time they were made were suggestive and interesting.

It is time to turn to the mountains which were the chief scene of Placidus a Spescha's exploits, and to relate his ascents in detail in their proper place in the history of early mountaineering in the Bündner Oberland.

The group now commonly known as the Tödi district embraces the two chains of mountains which form the northern limit of the Vorderrheinthal and enclose on the west the Maderaner Thal and its tributary glens, and on the east the upper portions of the Linththäler. It contains four summits between 11,000 and 12,000 feet high. Of these the Tödi alone approaches the superior limit. Up to the end of the last century the Sandgrat was probably the only *glacier* pass across the chain known to the people of the country, and the peaks were all unclimbed.*

The Tödi, the sovereign of the group, has two principal peaks. The highest (11,887 feet) lies on the watershed between Glarus and Graubünden, and is known by the Romansch name of Piz Russein; the second, only 72 feet lower, which in Spescha's time bore commonly the name of Tödi, projects northwards, and, from being the summit visible from the Linththal, is now distinguished as the Glarner Tödi.†

According to Ebel's 'Swiss Guide,' the editor of which warmly acknowledges his obligations to Spescha for his aid in its compilation (2nd ed., Zürich, 1804), Spescha ascended the Tödi about 1784. The following is the passage referring to the expedition:—

* The following list of Pater Placidus's exploits is taken from the sixteenth 'Jahrbuch' of the Swiss Club (p. 484):—Badus and Piz Cotschen (Oberalpstock), each three times; Piz Ault, Piz Giuf. In the Tödi group, Piz Avat (Piz Gliems), Stockgron, Piz Urlaun, Muot da Robi. In the Medelser Gebirge, Piz Muraun, Piz Cristallina, Scoopi: Serengia, near Cornera; Surcombras (Weissenstein), near Savien; Valolia (Piz Aul); Derlun (Piz Scherboden); Piz Terri and Piz Cavel, above the Vrin Thal; Piz Valrhein and the Guferhorn.

† I have throughout this paper spoken of the mountain by the name it usually bears in Swiss literature, the Tödi, distinguishing, when necessary, its two summits by their individual names.

'Pater Placidus a Spescha first reached the top of the Tödi from the south side. According to this observer the mountain overlooks all the summits of the Bündner Oberland, Uri, Glarus, and Unterwalden. The view is remarkable.'

Again, in the third edition of Ebel (Zürich, 1809), we read: 'To ascend the Tödi it is necessary to sleep at the Alp Ilems, in the Ruseinthal. From this the climber goes up Piz Urlaun and descends by the level ice valley to the southern spur of the Rusein, and over this and the Rusein to the Tödi. It is possible to return by nightfall to the Ilemshütte. In the ice valley the crevasses are so wide that they cannot be crossed without a ladder.' On another page we read: 'Placidus a Spescha ascended the Stockgron, in the Ruseinthal, in 1788. The view is fine, though limited by the higher and more projecting Rusein. To the east of this is a depression from which a glacier plain may be attained, and from this the southern ridge of the Rusein can be reached and ascended.'

Herr Ulrich, in his paper on the Tödi in the first series of 'Berg- und Gletscher-Fahrten,' considers these three notices, read together and regarded apart from other evidence, to be self-contradictory and to involve impossibilities. I cannot share his opinion. The depression east of the Stockgron, the existence of which Herr Ulrich denies, exactly answers to the Porta da Gliems, and the description of the route to be followed in the ascent is sufficiently exact. After ascending from Trons, and crossing by the summit of Piz Urlaun to the Gliems glacier, it was seriously debated by the writer's party in 1865 whether the Tödi should not at once be attacked, and weather rather than time led to the abandonment of the project. Even the practicability of the northern face of Piz Urlaun, positively denied by Herr Ulrich, has been proved of late years.*

The only difficulty of any weight in my opinion is the expression 'goes up Piz Urlaun.' But, considering the date of the narrative, and that the easiest pass from the southern side to the snows of the Biferten glacier lies on the shoulder of Piz Urlaun, I think the phrase may fairly be read as equivalent to 'up to' or 'close by' Piz Urlaun.

An advocate, anxious to establish Spescha's claim, might further argue that it is highly improbable that the conqueror of the Piz Urlaun, the Oberalpstock, and Piz Valrhein should have waited thirty years, and until he was over seventy years old, before seriously attacking the greatest of the mountains round his own home; and that it is almost incredible that a

* By Herr Hauser, in 1866, 'S. A. C.,' Jahrbuch, iv. 16.

mountaineer so experienced and of so much local knowledge, having discovered the Porta da Gliems and the access it afforded to the summit, should have failed to make use of it. He might further point out that Spescha was at this time a contributor to a Swiss magazine, the 'Isis,' in which no contradiction or correction of the passages in 'Ebel' seems to have appeared; and that the first volume of the 'Alpina,' published at Winterthur in 1806, contains an elaborate and minute criticism of the 'Ebel' of 1804, in which the Tödi article is passed by without remark of any kind, which would hardly have been the case had the ascent been falsely claimed.

If the passages in 'Ebel' stood by themselves, and no further evidence was forthcoming from Spescha's or other contemporary writings, I should be disposed to yield to these arguments, and, accepting Ebel's clear statements, to add the Tödi to the old monk's early exploits. But this opinion, plausible at first sight, has been rendered untenable by the MS. account of the 1824 ascent found by Professor Theobald amongst Spescha's papers, and recently printed in full by the Swiss Alpine Club. With this before us we can no longer doubt that all Placidus a Spescha did in his youth was to reconnoitre and lay down with absolute precision the easiest route up the mountain, and that some obstacle delayed his profiting by the discovery. This obstacle was, in all probability, the difficulty of finding companions who would face a crevassed *névé*. Where necessity compels, as at the foot of a great chain like the Pennine Alps or the Central Caucasus, peasants will adventure themselves, or even drive their flocks, over glaciers and snow-fields; but in ranges of the second order, where the glacier is an obstacle easily turned, its terrors remain intact until mountain-climbing has been first introduced as a sport and then turned into a science. It is very likely that no chamois hunter would follow Spescha through the yawning abysses of the upper snow-fields, and the fact that in the 1824 ascent the rocks of the Porta da Spescha were climbed, instead of the glacier of the Porta da Gliems (which we have ample evidence was well known to the monk), shows the desire on his companions' part to have as little as possible to do with snow and ice.

The blunt statement of Spescha's successful ascent, inserted in the second edition of 'Ebel,' remains to be explained. Its modification in the following edition is, I think, significant. I believe that Spescha, who at the time of the issue of 'Ebel' was offering rewards to any one who could open the way up Piz Russein he believed he had discovered,* seized the oppor-

* See the following passage, kindly extracted for me by Dr.

tunity of the publication of the guide-book to extend the invitation to climbers generally. Such an absence of personal ambition in a mountaineer will doubtless be inconceivable to some modern peak-hunters; but it was perfectly consistent with the old monk's character. The conversion of this invitation into an explicit assertion of Spescha's having made the first ascent was, in my opinion, probably due to a blunder, such as injudicious editors, when they alter MS., are apt to fall into. A case very much in point may be found in the treatment the original account of the first ascent of the Finsteraarhorn underwent at the hands of the editor of the 'Alpenrosen.'* According to this theory the alteration in the third edition would be due to Spescha's having taken care to have the passage restored to a proper form.

On August 19, 1823, when Spescha was over seventy, the hardy and persevering old mountaineer made his fifth attempt on the Tödi, in company with his servant and a painter, Herr Isenring, of Toggenburg. They slept at the Gliems Alp, and next morning climbed the glacier behind the Stockgron. When they had proceeded for three hours on the ice, the folly and incapacity of his companion, and the approach of bad weather, stopped their advance. Spescha's intention to try again on the next day was frustrated by the weather, and he was compelled to put off till the subsequent year any further attempt. The following is Spescha's own account of his next and final assault on the mountain †:—

Killias from 'Beschreibung der Alpen, vorzüglich der höchsten . . . aus den Schriften von 1782 bis zum Jahr 1822 gezogen.' (MSS. vol. in 4to, property of the Histor. Society, Chur.) The preface, under Spescha's signature, is dated '18. Mai 1822' (orthography unaltered):— 'Meine Reissen in die hohen Gebirge fingen im Jahr 1782 an. Ich erstieg erstlich die Poxata (*sic*) am Rande des Medelser Glötschers, gleich darauf den Scopi, höchsten Gipfel des Lokmanier, und den Stockgron im Russein-Thal. Gleich nach 1785 hatte ich das Glück in Gesellschaft dreier Medicinæ doctoren . . . den Valrhein zu ersteigen. . . Ich stellte hernach denen Belohnungen aus, welche den Weg auf den Cotschen und Rusein mir vorzeigen würden, allein Niemand nahm diese Bemüthung auf sich. Endlich erstieg ich den Urlaun im Jahr 1793 und beschloss damit meine Reissen auf die höchsten Alpgebirge. Diesser Gipfel war bis dahin unerstiegen und ist nach dem Russein und Tödi der höchste in der Gegend.'—Vol. ii. p. 7.

* See 'Alpine Journal,' vol. viii. 'History of Early Mountaineering,' p. 66.

† Translated from the Swiss 'Jahrbuch,' vol. xvi. In preparing this paper, prior to the publication of Spescha's MS., I had applied to our honorary member Herr Ivan von Tschudi, and by his kind inter-

Yet again my sixth attempt to climb the Russein remained fruitless; my goal, however, was reached, and I thank God for it.

I sent the two chamois-hunters, Placidus Curschellas, of Trons, and Augustin Bisquolm, of Dissentis, from the upper huts of the Russein Alp on September 1, 1824, and by eleven o'clock they had climbed the peak. According to what they say, it is possible to cross from it to the Tödi. Owing to the upper mists, the central chain of the Alps, with the exception of a few prominent peaks, was veiled in vapour. France (Elsass) and Baden were extremely clear. In Glarus they could see eight or nine villages, in one of them a conspicuous church, on the other side Medels and Lukmanier. More to the west a very lofty and snowy summit, probably Mont Blanc, raised itself. They placed it, however, in Piedmont. They marvelled at the enormous depth of the valleys immediately surrounding them, Sandalp and Russein, and at the neighbouring snow-fields and glaciers. They thought they made out part of the Lake of the Four Cantons, and this is very possible. They only remained 30 minutes on the peak. They complained much of difficulty in breathing, obscuration of the vision and dizziness, and their eyes were inflamed from the new snow, which was in many places too soft to bear. As they reached the top a soft south-west wind sprang up and blew the particles of snow into their faces. One sat on his cap, the other on his pick. In this position they ate up the smoked bacon they had brought with them. As a sign of their visit they left the skin, for they could not find, far or near, any stones for building a stoneman. They agreed in declaring that neither of them alone could have climbed the mountain; mutual help and encouragement were essential.

I, with my servant Carli Caguenard, of Trons, climbed up a considerable height on the right hand in order to witness the ascent and return of the hunters. At 4 p.m. we came together to the above-mentioned huts, where we refreshed ourselves and recounted the events of the day.

Piz Russein, also called Crap Glaruna, rises north-east above the heads of the Sandalp and Russein valleys. Its base descends into the bottom of the valleys. Two snow-ridges which meet at an angle form the summit. From this point the snow forms a roof-like mass which affords the way to the Tödi. It (Piz Russein) is the highest peak between the Rhine and Reuss. In the year 1811 a great mass broke off it.

The MS. quoted above, now the property of the Historical Society of Graubünden, is entitled 'Geographische Beschreibung aller Rheinquellen und der dahin angestellten Bergreisen in einem Auszug meiner Schriften vom J. 1782 bis 1823, und einer Gebirgskarte zur Erläuterung versehen

vention obtained, through the courtesy of Dr. Killias, of Chur, full confirmation of Professor Theobald's extracts, as well as further details used in subsequent paragraphs. Herr Ulrich, misled by some groundless remarks of Hegetschweiler, has disputed this ascent.

von Herrn Placidus a Spescha, Konventual in dem Kloster Dissentis.* The introduction bears the date February 12, 1823. The work contains a complete list of Spescha's successful and unsuccessful ascents up to date, and is followed by a supplement containing an account of his fifth and sixth attempts on the Tödi, that with Herr Isenring in 1822 and that of 1824. Beside the latter is pasted a cutting from the 'Churer Intelligenzblatt,' No. 48 of 1824, which must have been inserted by Spescha himself. It runs as follows:—

'Den 1. Sept. ist der Piz Rusein, eine der drei höchsten Bergspitzen unseres Kantons, von zwei Gemsjägern aus dem Hochgericht Disentis, Placi Curschellas von Trons und Augustin Bisquolm von Disentis, erstiegen worden. Zwei glauwürdige Männer von Trons, welche die Reise mitmachen wollten, das Ziel derselben aber nicht gänzlich zu erreichen vermochten, waren Augenzeugen davon. Die benannte Bergspitze, die sich im Hintergrunde der Ruseinthalen erhebt, lehnt sich südwestlich an den Glarnerischen Tödi, den sie an Höhe übertrifft und ist die Grenzscheide zwischen Glarus und Graubünden. Eine unermessliche Schneelage, die sich auf allen Seiten hinabstreckt, bedeckt dieselbe seit ewigen Zeiten. Zwar oft versucht, aber stets misslungen, war diese Bergspitze bis dahin von keinem menschlichen Wesen erklommen worden.'

Dr. Killias adds that throughout the MSS. in the possession of the Historical Society there is no allusion of any sort to explain the entry in Ebel's guide. The explanation he proposes is that Ebel may have taken the ascent of the Stockgron made from Val Russein for one of the Tödi. I still, however, prefer my own suggestion offered above.

I now turn to the record of the attempts made by subsequent explorers to reach the summit of the Tödi. It is a long one, and is curious as exhibiting how good a defence could be made by a second-class mountain in those days. To all who examined the range it must have been plain that the proper way to the summit must be over the upper snows of the Biferten Glacier. Spescha had many years before pointed out the easiest approach to them; that by the Porta da Gliems; but it long remained unnoticed,† though one adven-

* Spescha spells 'Dissentis' and 'Disentis,' 'Russein' and 'Rusein,' indifferently.

† Hegetschweiler. See 'Berg- und Gletscher-Fahrten,' vol. i. pp. 195, 207–208.

turer came near re-discovering it. For nearly forty years all the attempts to scale the mountain, and at a later date all the ascents effected, were made from the Ober Sand Alp by crossing the southern base of the mountain and trying to force a way beside the difficult Biferten Glacier.

Before Spescha's last attempt from the west, one of the most persevering of the unsuccessful assailants, the botanist Hegetschweiler, had commenced a series of attacks upon the mountain from the Glarus side, apparently without any knowledge of the route to the summit so plainly set forth in the pages of Ebel's Guide. In August 1819 he made an attempt by the Sandfirn and the glacier lying between the Tödi and Klein Tödi, but was forced to return without even reaching the base of the minor summit. On August 26 in the following year he ascended to the Sandgrat and reconnoitred the northern face of the mountain. The guides pronounced the rocks inaccessible, and their verdict long remained unquestioned. Next day he made another attempt. The party started at 6 A.M., August 27, from the Ober Sand Alp, and crossed the base of the Ochsenstock to the Biferten Grätli, whence they descended on to the Biferten Firn. The ice-fall which barred the way was turned by a gully (since known as the Schneerose or Schneerunse) on its right-hand side, and it was thus proved that the upper snow-fields could be reached from the Linththal. But time and unfavourable weather hindered any further advance, and the party reluctantly descended, led, we are told, by Galepp, the dog of one of the guides. Hegetschweiler observes in his account of this expedition that between the Biferten (Stock ?) and Tödi it was possible to make a pass to Graubünden, and consequently that an ascent of the Tödi might be made from the south side.

On August 12, 1822, the climbers, following the same route and starting at an earlier hour, only succeeded in reaching a somewhat higher point (about 10,000 feet), since known as Hegetschweiler's Platte. On this occasion, in crossing the Schneerunse on the descent, the party was exposed to serious peril from the fall of an ice avalanche. This spot appears to be always dangerous from this cause, and, though no fatal accident has occurred, many climbers have been struck or had narrow escapes from injury.

In these two attempts Hegetschweiler had evidently learnt that the access from the Graubünden side might be found much easier, for on the following day he sent the guides across the Sandgrat on an exploring expedition. They returned on the evening of the 14th, and related that they had ascended

from the Sandgrat by the clefts and gullies of the Klein Tödi to the south side of the Russein, and had succeeded in reaching an adjoining crest. In their opinion the ascent of the Russein itself from this point was not impossible, but inadvisable without special preparation. They probably had no rope; and as they must have seen crevasses from the highest point they reached, they would consider the upper glacier impassable without a ladder. Hegetschweiler did not follow up their reconnaissance.

In July 1833 some Linththal peasants made the next attack on the mountain. In the following year, according to their own account, they gained the upper *névé* of the Biferten glacier from the Russeinthal by climbing the steep slopes near the Stockgron, and from this, without serious difficulty, reached the summit. This reported ascent took place July 17, 1834.

On July 30 Herr Ulrich and some friends engaged the peasants as guides to show them the route they had taken. In descending from the Sandgrat Herr Ulrich nearly disabled himself by a slip down a long snow-slope. Next morning bad weather prevented any attempt, and they returned by the Kisten Pass, where the guides displayed such incompetence as to throw doubts on their asserted success. Next month Hegetschweiler, with Escher von der Linth and another companion, appears on the scene with the same three peasants. Unfortunately the gully by which the peasants had ascended was now found full of ice, and the difficulties of the route, with the uncertainty of the weather, led to a fresh failure. It is difficult to determine whether the peasants had really reached the top. Their demeanour and replies did not satisfy Hegetschweiler. On the other hand, it is much more likely that three fair climbers should have got up the rocks of the Porta da Spescha than that they should have failed.

It is a relief to come at last to an unquestioned ascent. The various attempts on the Tödi had made it a famous mountain in the Linththal, and even the peasantry were stirred to seek after the honour of first planting a flag on the great rampart which overhung their homes. The first ascent of the Tödi from the north is one of the most plucky feats in Alpine climbing performed by a party of peasants of their own impulse.

On August 12, 1837, three peasants came to Stachelberg and declared that on the preceding Thursday (August 10) they had reached the summit. These were Bernhard Vögeli, an active man in spite of his threescore years, and bearing the reputation of a bold hunter and climber; Gabriel Vögeli, his son; and

Thomas Thut, a cousin of the guide of that name who had taken part in many previous attempts, both accounted skilful hunters and good cragsmen.

When their assertions were doubted, Bernhard Vögeli, in simple but earnest language, told the story of the ascent. From his earliest youth, he said, he had desired to ascend this mountain, which was touched first by the rising and last by the setting sun. His design had been put off year after year till, on hearing of the failures of Hegetschweiler and others, he could no longer hold back, and found two fitting comrades to join him. On July 31 they had made their way along the Biferten glacier till opposite the Piz Urlaun, when they were driven back by a mist. On August 4 they tried again, and after getting into many difficulties on the glacier they were obliged to bivouac, and spent a miserable night under some rocks. Next morning they crossed the Schneerunse at some risk, and gained the upper slopes, but were again forced to return by mists. Instructed by these failures as to the proper route and the appliances that were needful, they started at 12.30 A.M., August 10, for a third attempt. They followed the same route, and at midday found themselves, after long wading in soft snow, in a narrow ice-valley which led them round on the south side of the mountain to what seemed to be its summit plateau. Here a thick mist suddenly came on, and they advanced at random. To the terror of his companions, the elder Vögeli was seized with a violent shivering fit; but, gathering his strength together, he managed to shake it off, and they once more began to advance on the level surface, when the clouds suddenly broke, and with surprise and almost with terror they perceived that they had reached the summit. They set up two alpenstocks in the form of a cross, attached to them some handkerchiefs for a signal, and, leaving the crest at 2 P.M., accomplished the descent safely.

Their story was at first received with some doubt, and all eyes and glasses were turned on the summit in search of the signal. It was not until the elder Thut, Hegetschweiler's guide, came down from an alp and declared he had seen the signal with the unassisted eye, as well as with a telescope, that it was discovered at a spot rather to one side of that in which it had been looked for.*

On August 19 in the same year the three peasants, now the Tödi guides, conducted Herr von Dürler to the summit.

* Berg- und Gletscher-Fahrten, vol. i. p. 214.

Obstacles which they had not encountered on their first ascent were found on the upper part of the mountain in the shape of crevasses. On the descent the party was barely clear of the dreaded 'Schneerunse' before it was swept by a volley of ice and stones; but the expedition was safely and successfully accomplished. On July 31, 1846, Herr G. Hoffmann failed in an attempt, being stopped by a large crevasse near the top, which was estimated at 60 feet in width. Strange as it seems, we are assured that in neither of the ascents in 1837 was the peak either of Piz Russein or the Glarner Tödi reached. The climbers were content with attaining the uppermost ridge of the mountain at a point ten minutes distant from the latter summit.

In 1853 the Glarner Tödi, the northern and lower peak, was at last attained. Professor Ulrich, with Herr Siegfried and Herr G. Studer, accompanied by the guides Thomas Thut, Gabriel Vögeli (B. Vögeli had died in 1848), and Johann Madutz, starting from the Sand Alp, successfully overcame all the difficulties of the ascent, and in about eight hours reached the peak of the Glarner Tödi. The lateness of the hour prevented their ascending also the Piz Russein. This was not revisited till July 30, 1861, when Herren Simler and Sand found the distance between the two summits only 20 minutes.

Of late years the Tödi has been frequently climbed by Swiss tourists. In 1853 Herr Ulrich was convinced that there was only one point, a gap west of the Stockgron, apparently the Porta da Spescha, which could be reached from the west side! In 1863 Herr Simler, with some friends of the Swiss Alpine Club, reopened the Porta da Spescha and reached the Piz Russein by it in 7½ hours from the Russein Alp.* In 1865 Messrs. A. W. Moore and H. Walker, having ascended the Tödi by the Biferten glacier, descended to the Russein Alp in three hours by the Porta da Gliems.† The ascent from the Glarus side had been much facilitated by the erection of a substantial hut, under the supervision of the Swiss Alpine Club, on the rocks of the Grünhorn, by the side of the upper icefall of the Biferten glacier. But until 1866 no way of avoiding the Schneerunse had been found, though few travellers passed it without a warning of its dangers. The icefall had been regarded as impassable by all who approached it until, on July 19 of that year, the writer and Mr. C. C. Tucker were led by François Devouassoud straight up the centre of it.‡ The pas-

* 'S. A. C.,' i. 52. † 'Alpine Journal,' vol. iii. p. 164.

‡ 'Alpine Journal,' vol. ii. p. 363.

sage proved a very simple piece of ice work, and only took an hour. On July 26 of the same year Herr Hauser, on his way to the Piz Urlaun, found another passage on the left-hand side of the glacier.* The English party last mentioned did not reach the top of the Tödi, owing to bad weather, but effected a new descent on the Graubünden side by a narrow and difficult gully falling from the gap between Piz Russein and the Bleisas Verdas to the small glacier immediately south of the Sandgrat. This pass is known as the Russein Lücke, and has been used since by a Swiss party. One more 'impossibility' of the early climbers, the direct ascent of the rocky face of the Tödi above the Sandgrat, had been proved possible a few days earlier. On July 14, 1866, Dr. Picard descended from the summit to the Sandgrat, led by two local guides, and the ascent has been made more than once since by that route.

We cannot afford to spend much time on the minor peaks of the group. Piz Urlaun (11,063), a near neighbour of the Tödi, was an early conquest of Placidus a Spescha, who climbed it in 1793 and considered it one of his most difficult ascents.† It was revisited on July 11, 1865, by Mr. Tuckett, the writer, and some friends.‡ They ascended from Trons and descended on to the Gliems glacier, and but for doubtful weather would have proceeded on the same day to ascend the Tödi, thus justifying one of the remarks of Spescha which has been most criticised by Swiss writers.§ The difficult ascent from the Biferten glacier, already referred to, was effected by Herr Hauser, of the Swiss Alpine Club, in 1866.||

The Scheerhorn (10,814), the loftiest of the snowy summits which face the pasturages of the Klausen and turn their backs on the great snow reservoir which feeds the Hüfi and Clariden glaciers, was conquered by Herr G. Hoffmann on August 9, 1842. He started from the Kamml Alp and ascended by the Gries glacier.

The guides, Joseph Maria and Melchior Trösch, made in 1848 the first ascent of the Grosse Windgelle (10,463), and a few days later (July 31) led Herr Hoffmann to the top. Hoffmann found the ascent decidedly difficult in parts, and under certain conditions considered that it would be impossible. The line of his ascent, which crossed the great southern face of the mountain, has never since been used. On the occasion

* 'S. A. C.,' iv. 16. † Theobald, 66.

‡ 'Alpine Journal,' vol. ii. p. 134.

§ See quotation from third edition of 'Ebel,' p. 297.

|| 'S. A. C.,' iv. 16.

of the next ascent, fifteen years later,* an easier route was found nearer the main ridge, which saved much time and trouble. In these, as in the many subsequent ascents, only the eastern peak of the mountain was reached. The western peak, of equal height, retained the name of inaccessible till, on August 12, 1876, Mr. Holzmann, a mountaineer accustomed to limestone in the eastern Alps, made the ascent† and passed without serious difficulty to this second peak, described even in the last edition of the 'Alpine Guide' as defended by a 'deep, impassable chasm' and seemingly 'inaccessible.'

Of the other peaks round the Maderaner Thal the Kleine Windgelle (in 1844), the Dussistock (in 1842), and the Bristenstock (in 1823) were all attained by Swiss climbers. The name of the latter peak has been rendered familiar to English readers by the account of a night adventure on it given by Mr. E. S. Kennedy in the first series of 'Peaks, Passes, and Glaciers.'

A nobler mountain than any of these is the Oberalpstock or Piz Cotschen (10,925), which rises in a sharp rocky crest, surrounded by glaciers, on the boundary line between Uri and Graubünden, south of the Maderaner Thal. Placidus a Spescha first reached the top about 1790. Accompanied by his servant, he slept at the Runs Alp (6,883 feet), north of Disentis. Early next morning they gained the ridge dividing the Cantons. Here they overlooked the great plateau of the Brunni glacier, and saw across it slopes of snow and ice leading up to the summit of the Oberalpstock. After crossing the plateau without difficulty, they fastened themselves together for security with a long rope, as the snow-slopes were full of wide crevasses. When they had ascended some distance they were obliged to bear to the left and gain the ridge of the mountain to turn an unusually wide crevasse. On the slopes above this they had a narrow escape. A layer of new snow lying on the surface broke loose, and rushed down in an avalanche upon them. Spescha sprang up to fix his feet and alpenstock as deeply as possible in the old snow, and succeeded in maintaining his position. His servant, being behind him, was hardly touched by the avalanche, but was so frightened that Spescha, in order to calm his nerves, had to hear his confession before proceeding. In an hour more they reached the top. Spescha estimates the time spent in ascending this slope at 2½ hours. It is about 2,000 feet in height.

* 'Alpine Journal,' vol. vi. p. 326.

† Ibid. vol. viii. p. 160.

In descending they came on the great crevasse at a point where it was narrower, and Spescha desired his servant to jump over whilst he held the rope. He jumped short through fright and fell in. Spescha had to pull him out and help him over.

They reached home without further misadventure. Spescha made two ascents subsequently from the Strimthal, which he left at the point where it forks. After gaining the ridge the route followed was the same as in the first ascent.* No other ascent was made till 1847, when Joseph Maria Trösch led Herr Hoffmann to the top. After sleeping at an alp in the Etlithal they crossed the Kreuzli pass, and keeping at a level along the slopes of the Weitenalpstock and the upper part of the Strim Glacier, gained the foot of a steep rock-chimney reaching nearly to the summit. The ascent from this point occupied four hours. The mountain again remained unvisited for seventeen years, when an ascent was made from Sedrun by the route of Spescha's later ascents. In the numerous ascents subsequently made from the Maderaner Thal the upper plateau of the Brunni glacier was almost invariably gained by the right bank, and a wide circuit made round its head to gain the base of the final peak. In late years, however, a route by the left bank has been followed with a great saving of time.

A way up the remarkable peak of the Brigels Horn or Piz Tumbif was discovered, says Prof. Theobald, by a priest of Schlans while in pursuit of chamois. After his death the path was lost, and had to be rediscovered in 1865 by some members of the Swiss Alpine Club.† In other parts of the group the Hausstock, a broad snowy summit east of the Bifertenstock, and the Gemsfayrenstock were climbed by Swiss mountaineers in 1832 and 1854 respectively. The outlying summits of the Glärnisch (9,584), so noble an object from the plain or the valleys at its foot, were all reached in early days. The highest, the Bächistock, is ascribed by Herr Studer to Professor Heer, of Zürich, the lower, but more difficult, Vrenelsgärtli to Herr Siegfried in 1848.

South of the Vorderrheinthal and east of the Lukmanier we find two considerable glacier groups, the Medelser and Adula Gebirge. The former contains several peaks of between 10,000 and 10,500 feet, one of which, not the highest however, Piz Puzata, was among Placidus a Spescha's conquests. The peak

* Theobald, 83.

† 'S. A. C.,' iii. 148.

which overlooks the Lukmanier on the west, the Scopi, was also climbed by the monk. In 1819 Escher von der Linth repeated the ascent, of which he has left a description. This region was then almost entirely deserted by mountaineers until 1865, when Messrs. A. W. Moore and Walker visited it.* It has recently been completely explored by Swiss climbers.†

The Adula or Rheinwald group is more important. From early times it has had celebrity from the relation of its principal glacier to the great German river. The Roman road over the San Bernardino brought travellers into its immediate vicinity. A temple is said to have stood near the point where the young stream leaves its ice cradle. We may amuse ourselves by holding, despite the commentators, that the epithet in Horace's '*Rheni luteum caput*' (with Virgil's '*Sævis cautibus horrens*' for the Caucasian gorge of the Dariel) was a piece of local colour derived from the report of travellers.

The ascent of Piz Valrhein (11,148), the highest peak of the group, was first effected by Placidus a Spescha in 1789, and was one of the most remarkable feats of that worthy monk. The story of how he picked up his companions is a good illustration of the state of alpine knowledge a hundred years ago. Three doctors of medicine were found by Spescha seeking near Medels the cradle of the Rhine. But I must take advantage of the recent publication of Spescha's manuscript (see p. 295) to allow the leader of the expedition to tell his own story.

For my ascent of this important peak I have to thank the designs—and the blunders—of three doctors of medicine! These doctors, by name Rengger of Bern, Ackermann of Mainz, and Domner of Hannover, having set out for the *village* of Medels in the Rheinwald, came instead to the *valley* of Medels near Dissentis, and then back to me (at the Convent of Dissentis) to inquire the nearest way to the Rheinwald and the source of the Hinterrhein. They had already once gone wrong on their journey, and feared therefore they might go wrong again. They came on a singular errand, to ask for my services as guide, and my honourable Herr Abbot gave me leave for the purpose.

With morning we travelled down the valley to Surrhein, turned southwards into the side valley, Tenija (Sonvix), journeyed sideways through the Dierut, and then bending eastward came with evening to Romein in Lugnetz.

At the end of Alp Tenija the doctors busied themselves with collecting plants, and were fortunate in their quest. Soon, however, we felt a rising wind from the south-western gorges of the Greina, and the horizon was obscured with gloomy mists. The wind grew stronger

* 'Alpine Journal,' vol. iii. p. 164.

† 'Jahrbuch,' ii. 3.

at every moment and twice threw my worthy Doctors down on their knees. They began to lose courage, and I too felt uneasy for them. We had only one more violent gust to endure, but that threw me on my knees and the worthy Physicians on the ground, scattering all their plant collection. What a misfortune! By myself I could do nothing to cheer up these worthy gentlemen except by pointing out to them the abatement of the wind (which at other times carries stones from their place, lifts and flings to a distance slates, men, even laden animals) and giving them hope that the gorge would soon be passed. Still weather and heavy rain followed, and in four or five hours without taking shelter we reached our hospice (in Romein), where we found dry things and provisions.

After it had rained the whole night the mountains were in the morning covered low down with snow, and we rested all day.

Next day we went in two hours to the chief village, Vals, in three hours to the Valserberg, and in two more down to Rhein (Hinterrhein). There Herr Landamman Hösli waited for us with a noble bottle of Veltliner, and provided us with everything we stood in need of.

On the following day the weather was unusually clear and pleasant. Provided with a guide we set off on the way to see the source of the Rhine and what lay beyond. On my own account I took a guide from the Zaport Alp, a shepherd named Antonio.

The Rhine bursts as a river from an ice-vault and rushes over the stones past the Alp. We crossed the long Rheinwald glacier without difficulty or danger, and in three hours reached the hollow which lies between the Cuver (Guferhorn) and Piz Valrhein. Our guide, when he saw the precipices of the Lentaal with its and the other glaciers, and took account of the way up the Valrhein, refused to go a step further with us. No persuasion could bring him to it.

However, the courageous shepherd took the lead, I came next, and the doctors followed. Soon my next follower clutched my robe, and each of the others the coat of his fore-goer. After a time I found it a little too much to hold up and draw after me all the three doctors, who allowed themselves very perceptible backslidings. I therefore in turn grasped for security's sake the tail of the shepherd's coat. In this way we wandered in a line over the narrow snow-ridges. Care was needful to avoid slips and false steps, for a fall on our right would in some places have been certainly fatal.

From the depth of the hollow already spoken of up to the peak the ridge of the mountain is covered with snow and trends towards S. or S.W. For the first half it is steep, then becomes gentle for a short space, and is then again steeper than at first. Nothing rises above, nor is it broken by any ice or snow pinnacles. Only very long snow-slopes stretch down from it into the depths of the valleys. The view on to the Lenta glacier is awful and almost perpendicular. We followed always the ridge of the mountain, but at last it became so steep that we were not able to find footing on it, and we had no implement with us fit for cutting steps. We were obliged therefore to cross a somewhat less steep snowslope, so as to be able to climb the peak from the W. side. Rengger, who was next behind me, slipped. I sprang

to him, clutched him, and placed him on his feet again. Nothing serious could have happened to him; he might have damaged his skin or his clothes, but some level snow just under us would have stopped him. Yet this accident made such an impression on the gentlemen that they would not go on with the expedition, so we made them seats and footholes in the snow. They had before them a wide view to the N. and W., and with that they contented themselves.

We had scarcely gained the W. side, when the shepherd let fall his stick, which slid downwards and was lost to view in a crevasse. What my feelings were at this unlooked-for ill-luck may easily be imagined, since the worst bit of the ascent lay before us, where, unprovided with crampons, we must make our way over the hard ice, which was bare of fresh snow. Luckily, however, I was able to persuade the good man to search for his stick. He approached the crevasse with slow steps, at each he cried out *Jesu, Maria*, finally he knelt down and grasped the stick. The hazardous corner was crossed and we breathed freely. Now, however, a fresh dilemma met me. When I tried to encourage the guide to complete the ascent of the summit he replied *Mi no*, 'Not I,' and as often as I made appeal to him he kept answering me quite composedly with his *Mi no*. So I had to climb the last peak alone, and I found no difficulty in doing so, as it was all snow.

When one stands on the summit itself, one is on a cornice of snow that overhangs to the N.E. I only found this out on the descent, otherwise I should have thought twice before going on to the very crest. Perhaps the fear that it might give way was the shepherd's reason for not following me.

From the top I saw near at hand nothing but bare mountains, wild pasturages, ice and snow; further off little but the hollows of the valleys, but countless peaks. The only instrument I had with me was a compass; I had not even a telescope. At that time my long sight supplied the place of the latter, at least for a general view, and for a close examination I had no time.

To the east I gave my attention first. I saw clearly the depression of the Vintschgau. On either side of this valley rose two very lofty mountains, the Ortler to the south, and the Uri or Wildspitz to the north. Tyrolese geographers cannot agree which is the highest; according to my ocular measurement the latter surpasses the former.

My second glance I gave to the S. and S.W. Over the mountains of the Calancathal I saw a portion of the Apennines; in the far west I saw other mountain chains wrapped in vapour.* Then the horizon drew nearer to me in the high ridges which fall from Monte Rosa towards Italy. In the west followed the northern mountains of Wallis; after them the summits of Bern, Uri, Glarus, and St. Gallen, which join

* Herr Herold has probably suppressed some words here, as Professor Theobald tells us that Spescha identified these as the mountains of Corsica. I need hardly say a wild and impossible guess.

on to the Tyrolese and Vorarlberg ranges. The only cultivated land in sight was a portion of the plain of the Po.

Berühmt muss dieser Berg wohl sein
Im Mittelpunkt der Alpen :
Aus seinen Füßen fließt der Rhein,
Bekannt den Jungen und Alten.

In returning I took up the first piece of rock I came upon,* and it appeared to me to be a fine-grained granite, which others class as fine gneiss.

Neither the shepherd nor the doctors had meanwhile stirred from their places. What would have happened to the latter had we never returned to release them from their position? We came again to the saddle whence we had set out to ascend the peak.

Thence we bore to the right by another way. I went first, and traversed a tolerably steep snow slope, and found myself at the bottom just as the rest of the party began to cross the top. Rengger lost his footing and shot down towards me like an arrow. With all speed I sprang into the snow and caught and stopped him before he reached the rocks, which might have broken his neck and limbs. Hardly had I got him on his feet when Ackermann fell in exactly the same way. Being a very heavy man, his descent was more rapid and violent. However, I sprang upon him like a vulture; my joints cracked, but he escaped uninjured.

We then descended over the lower glacier, paid our trusty shepherd and at dusk reached Rhein. Already on the glacier we had felt, some more than others, our eyes inflamed and smarting. Ackermann and Domrér drank no wine for supper, and suffered less; we winebibbers could neither sleep nor rest for pain and heat in the eyes. This was nothing new to our host. He made up an ointment with pounded alum and white of egg, the application of which relieved the smart instantaneously. The next day I travelled to Thusis, and smeared my skin again: the skin peeled on the hands and face, the smart ceased, and the eyes and skin soon returned to their usual condition.

We had none of the necessities for undertaking in security a mountain ascent: trustworthy guides, veils, proper shoes, sticks and crampons. In the middle of July, 1789, this journey was accomplished.

Traces of a stoneman built by Spescha were found on July 5, 1859, by Herr Weilenmann, who made the next authenticated ascent *alone*. As to expeditions without guides there may be much difference of opinion; solitary climbing over glaciers is suicidal folly, as those who have tried it would probably be the first to admit. These glaciers have twice borne witness to this fact. In 1834 two hunters found the corpse of a French cavalry officer on the ice. In the Napoleonic wars

* In 1864 the actual top of the mountain was bare rock.

deserters are known to have wandered over many of the Alpine passes. In 1854 a chamois hunter perished on the Zapport glacier under very distressing circumstances. After he had been absent two days his companions took alarm, and eighteen villagers set out to scour the mountains. After a whole day spent in fruitless search, on the second morning—the ninth since the hunter had left the chalet—they saw his stick beside a crevasse on the Rheinwald glacier. One of the peasants, the companion on the alp of the lost man, was let down into the crevasse. At a depth of 60 feet he found the frozen body of his friend, and beside him the chamois he had killed. From the position of the body it was evident that the hunter's legs had been caught as in a trap between the narrowing walls of the crevasse, and that he had in this position been frozen alive.

Herr Coaz, on September 13, 1861, like Herr Weilenmann, climbed the peak by the north-east ridge, crossing at the last the northern face and reaching the top from the north-west. In his case, as in Spescha's, some of the party failed to reach the summit. Since this time the Rheinwaldhorn has been run over from all sides. In 1864 the present writer, with Messrs. M. Beachcroft and Douglas Walker, climbed the peak for the first time from the Lenta glacier, striking the N.E. ridge of the mountain near the top.* In 1865 Messrs. Moore and Horace Walker reached the north-west ridge from Val Carassina, and crossing the top descended straight from it on to the Rheinwald glacier.†

Piz Terri, an outlier of the Adula group, rising south of Vrin in a bold pyramidal peak, was ascended by Placidus a Spescha in the last century, and never again until 1872, by Herr Calberla, of Dresden.‡ The final climb gave the hardy monk some trouble, and would, possibly, from the view-point of modern climbers, be considered as his best exploit. It is difficult in our generation, and particularly for those who have never wandered into remote mountain regions, to realise the horror and ignorance of snow and ice-work, to have overcome which constitutes, in our judgment, Pater Placidus's best title to a high place among the Founders of Mountaineering.

* 'Alpine Journal,' vol. i. p. 380. † *Ibid.* vol. iii. p. 172.

‡ 'S. A. C.,' viii. 81.

ROUND MONTE CINTO; WITH NOTES OF SOME EXCURSIONS
IN THE N.W. OF CORSICA. By F. F. TUCKETT.

WE learn (!) from 'Bradshaw's Continental Guide' that Corsica 'is intersected by the Bavella mountains, a picturesque granite range of snowy peaks rising 8,690 feet Pagliorbo or Monte Rotondo (*sic*); from which may be seen on a clear day the whole amphitheatre of the Mediterranean from Toulon to Naples, as well as the island of Sardinia.' This almost rivals the statement of Thackeray's 'little Billee' from his look-out station—

There's land I see,
Jerusalem and Madagascar,
And North and South Amerikee,

and seems to show that much ignorance still exists respecting the orography of the island. But for readers of the Journal Mr. Freshfield in a charming paper* has described his own expeditions, as well as the general characteristics of Corsican scenery, in terms at once so accurate and felicitous that he has left little to be said which could add to the completeness or attractiveness of the picture. Having, however, been the first to be enticed by the temptation which he held out, to attempt a rather more thorough exploration of the island than the time at his disposal permitted him to make, I venture to offer a few additional notes, especially in reference to that least known, north-western portion which lies between Corte, Porto, Calvi, and Ile Rousse. I must confess, indeed, that I passed far too hastily through it to do it anything like justice, but I hope to return to it on some future occasion, and, meanwhile, such practical information as I am able to furnish may perhaps stimulate the curiosity of other mountaineers and prove of some slight service to them.

As will be seen by the general sketch of my route which I append to this paper, I reached the *maison forestière* of Valdioniello (3,589 feet?) on the evening of June 5, having strolled over in the afternoon from Evisa by the Col de Vergio (5,026 feet), with the intention of ascending Monte Cinto (9,239 feet), the culminating point of the island, if the somewhat threatening weather should permit. We were by no means certain beforehand that we should be able to obtain quarters for the night at the establishment, and though, thanks to the kindness of one of the *gardes forestiers*, who gave up his own room to us, our doubts on this head were soon set at

* 'Alpine Journal,' vol. x. pp. 194-219.

rest, we found on the arrival of the *Garde-Général-Adjoint*, J. P. Carli, that he did not feel justified in allowing us to make use of the guest apartments upstairs reserved for such modern official representatives of Pan and his satyrs as *M. l'Inspecteur-Général*, &c. These *gardes forestiers*, *chefs* and subordinates, are as a rule capital fellows, but they are fast bound in the bonds of red-tapism and dare not freely follow their own hospitable instincts without orders from their superiors, so that I should strongly advise any one desirous of availing himself of the shelter of the various *maisons forestières* to obtain at Bastia, Calvi, Corte, or Ajaccio, according to the district he proposes to visit, letters of recommendation which, I am assured, the chief forestal authorities will readily furnish them. Armed with these the traveller is sure of a hearty welcome to the best accommodation of the various local establishments, whilst relieving their occupants of all sense of conflict between duty and inclination.

June 6th was the one day of steady, soaking rain which I encountered during my five weeks' stay in Corsica; but chat with our hosts and the Italian woodcutters,* who were driven from their work and repaired to the house, together with a pile of English newspapers, made the time pass pleasantly enough till five o'clock, when there was a lull in the hitherto ceaseless downpour, and François Devouassoud and I started down the monotonous valley of the Niolo for Calacuccia. A short time previously *M. l'Inspecteur-Général des Mines* had arrived from down the valley en route for Evisa, and as I had not long before met the *Inspecteur-Général des Forêts* at Bavella and heard of the recent visit of the *Inspecteur-Général des Ponts et Chaussées* at Ajaccio, this plethora of distinguished officials suggested a possible connection with the coming elections, which have since turned out so favourably for the Republican party.

The walk of about two hours is, I imagine, rather a dull one under the most favourable circumstances, and the village of Albertacce, which is reached in $1\frac{1}{2}$ hours, struck me, as seen in its dank, dripping condition, with ankle-deep black mud in its single filthy street, as about the most miserable and repulsive in the island. Calacuccia ($\frac{1}{2}$ hr. on), the principal place in the valley, cannot boast of anything very distinguished in the shape of a hostelry; but we found very tolerable quarters, with good fare and clean beds, *chez* Verdoni, and retired early to rest, as our

* They get from 50 to 60 francs a month, besides food and lodging, and draw their pay whether interrupted by the weather or not. If they harm the timber the Government proceeds against the *concessionnaire*, and he stops the culprits' wages until the fine is paid.

programme for the morrow, if the weather permitted, was the ascent of Monte Cinto, for which this seems one of the best starting points. 'Dis aliter visum,' however, for it poured in the night, and the morning was threatening and stormy, so that all hope of a view was at an end, and there was nothing in the appearance of the mountain itself, on this side at any rate, to tempt one to an attack except for the sake of what might be seen from the summit. So at 5 A.M. we again proceeded down the valley, reaching Corscia at 6. Here it seemed for some time that we should get no one to put us in the way to the pass leading to Asco, on the other side of the ridge which separates the valleys of the Niolo and Asco, and of which Monte Cinto is the culminating point. Addressing ourselves at last to the *yardes forestiers*, they, after an hour's delay, found a man who consented to accompany us to the summit of a col some way to the E. of the Capo Bianco, which he called the Bocca Bellavona. The path, though the immediate scenery was not particularly striking, was a varied and in places picturesque one, and commanded fine views down the gorge of the Golo below Corscia, as well as of the *massif* of Monte Rotondo, but the day was too gloomy to enable us to judge fairly of the landscape, and we pushed on as fast as we could induce our companion to go, in the hope of reaching Asco before the weather became worse. A little more than three hours, including two or three halts, sufficed to reach the Bocca, the height of which from an aneroid reading (594 millimètres) comes out about 6,500 feet. Asco was seen far below us a little beyond the junction of the stream of the Pinara, descending from the Capo Bianco, with the main torrent of the Asco. Above it, over a second col (Bocca Pietrella), we descried Olmi Cappella, our intended sleeping quarters on the upper plateau of the Haute Balagne, and beyond, but more to the right, the sea was clearly visible, whilst on turning round to the E. it was again seen on the opposite side of the island. Having dismissed our companion, a steep descent soon brought us into the region of pines, which, though—or perhaps because—scattered, were picturesque in form and grouping, and some of them of considerable size. It was necessary to keep to the left in order to avoid some precipitous rocks, but there is no sort of difficulty if the brushwood on the upper slopes be avoided as much as possible; and in less than an hour we had reached the comparatively level head of the valley traversed by the Pinara torrent. The path to Asco leads down its right bank in 1½ hours, so that about five hours suffice to reach the village from Corscia. The Asco torrent is crossed by a picturesque bridge, and I think I never saw fresh water of more exquisite colour or

apparent purity. Higher up the valley is the forest of the same name, but the woodcutters' establishment or *baraque* is said to be fallen into ruin, or it would probably make a good point of departure for the ascent of Monte Cinto from the north. It is, I am satisfied, possible to ascend by the stream of Valgo et la Manica and cross the ridge just to the E. of the peak, and then gain the latter by an apparently not very considerable *détour* round the southern spurs of its highest rocks. One of the *gardes forestiers* at Valdoniello told me that he had actually traversed this pass some years ago when anxious to make a short cut between Asco and Calacuccia, but nothing seemed to be known of its existence at Asco. It remains to be seen whether a pass can be effected from the extreme head of the Val Carozzica between the Punta Minuta (8,356 feet) and Capo Larghia (8,268 feet) W. of Monte Cinto to Albertacce by the valley of the Vico torrent, where the *Carte de l'État Major* inserts a Col de Crocette, but without making it clear that the name does not rather apply to a passage over a southern lateral spur dividing the valleys of the Viro and Erco torrents, which enter that of the Niolo above Albertacce and below Calacuccia respectively. At the head of the north-western branch of the valley of Asco there is a pass (Bocca di Parella or Petrella, 6,440 feet), and a little farther S. another (Col d'Avartoli, 6,234 feet), by either of which Calenzana may be reached, or, if preferred, by turning to the right a little way down on the W. side of the ridge and crossing back by the Bocca di Tartagine (6,093 feet), the forest of that name and Olmi Cappella may be gained. A shorter communication between the latter and Asco is furnished by the Bocca de l'Ondella (6,086 feet), due N. of Monte Cinto, and probably the scenery is very fine. A day would no doubt amply suffice for either of these excursions, and all of them must be full of interest. If pressed for time the pass of the Bocca Pietrella (4,062 feet), immediately N. of Asco, is by far the most direct route between that village and Olmi Cappella, and only occupies an easy four hours.

Asco is situated in a sort of 'punchbowl' or cauldron, and here, if anywhere in Corsica, Seneca's epithet must be applicable—

terribilis quum primum incanduit aestas;

as the heat is reflected from, and retained by, the high and steep rocky boundaries of the valley, and must be almost stifling.

We halted at the house of the *garde forestier*, a letter of introduction to whom had been given us by M. Carli, and who received

us very politely. As there is no regular inn, travellers may probably do well to seek hospitality at this house. The son, a fine young fellow, had shot a *mouflon* 13 years old in the winter, and told us that there was a live young one at a neighbour's, but, unfortunately, the door was locked, and the people had not come back when we started. Feeling rather hot and lazy, we enquired whether we could have a porter for our *rucksacks* as far as the col, and our host at once summoned his sister, who, though 63 years of age, tripped off with all our impedimenta on her head, and was charmed when, on asking one franc for her pains, she received two on reaching the Bocca Pietrella (4,062 feet) in 1½ hours from Asco. Clouds were gathering round the crags of Monte Traunato (7,208 ft.) which rise very grandly above Asco, and storms were sweeping down from the *massif* of Monte Cinto; so bidding our cheery old companion good-bye, we pushed rapidly down the northern slope in the hope of reaching our destination before the weather, which was becoming exceedingly cold, settled down to steady mischief. The wind rose, and became at last so furious that at times we had some difficulty in holding our own against the fierce gusts. Boswell, in his description of Corsica, remarks that 'all the interior parts of the island are well aired,' and there was no disputing the accuracy of the statement as we made for shelter, battered and almost staggered by the chill blast. The district we were traversing was bare of large timber, but much box grew in places on the slopes, and to our left as we reached a lower level we could see above us outlying trees of the forest of Tartagine, or what remains of it, for about 15 years ago it was almost ruined by a fire which lasted a fortnight and destroyed trees to the value of two million francs! Timber is worth about 80 francs the cubic *mètre*, and we heard of specimens of *Pinus laricio* cubing 23 *mètres*, and therefore worth about 70 guineas apiece.

At the bottom of the descent we forded the lovely clear stream of the Tartagine where it was broad and shallow, and then, ascending by a good track, leaving at some little distance on our left the curiously oriental-looking and not cheerfully named * village of Mausoleo, reached Olmi Cappella at 7.45, and

* Scanafaghiaccia ('slay and make cold as ice,' or 'kill 'em cum freeze 'em,' as it might be called if an English parish), in the Val de Cruzini, between Bocognano and Guagno and not far from Ajaccio, is another suggestive name, which acquires a lively significance from the fact that in a meadow not far from it, as the curé informed me, 700 Genoese who had been harrying the valley were surrounded and exterminated almost to a man.

were glad to find good quarters and a friendly reception at the house of a M. Angelo Maria, who has been engaged largely in the timber trade, and seems to be one of the most active and flourishing men in the district. In the upper portion of his large house was the *gendarmerie*, and he had nearly finished a new building on the opposite side of the road, in which we were very comfortably lodged, though he did not profess to keep a regular inn.

Olmi Cappella (2,723 feet) is in an open, airy situation, commanding fine views of the mountains to the S. and S.W., and protected to some extent on the N. and N.W. by the ridge which sweeps round to the head of the Tartagine valley. This, though in the neighbourhood of the village not much more than 1,000 feet above the sloping plateau on which it is built, rises farther to the W. into the peaks of Monte Tolo (4,370 feet), Monte San Parteo (5,512 feet), Monte Cineraggia (5,286 feet), Monte Grosso (6,368 feet), Punta Radiche (6,595 feet), Capo al Dente (6,667 feet), and Monte Corona (7,031 feet). The N. slope of this ridge is very steep and commands most magnificent views of the Haute Balagne and the sea beyond, whilst it is traversed by numerous passes which must afford charming scenery. Besides the carriage-road—a *route forestière* which crosses the Col de Bocca Croce (3,048 feet), and by which the timber of the forest of Tartagine is conveyed to Ile Rousse for shipment—horse or foot paths connect Olmi Cappella much more directly with Ville and Speloncato by the Bocca Battaglia (3,550 feet) and Bocca Croce d'Ovo (3,629 feet); with Feliceto by the Bocca Pianile (? 5,033 feet); with Zilia and Calvi by the Bocca di Cineraggia (4,698 feet); with Calenzana by the Bocca Bianca (6,155 feet); with Calenzana or the Val Ficarella by the Bocca di Tartagine (6,093 feet); and with the head of the valley of Asco by the Bocca de l'Ondella (6,086 feet). It will thus be seen that it is well placed as a centre for numerous charming excursions, it being no doubt possible in some cases to cross one of these passes and return by another the same day, whilst each peak must command even more splendid views of mountain, plain, and sea, and the crest of the ridge connecting them can apparently be followed in many parts for a considerable distance. In fact, this N.W. corner of the island is full of beauty, variety, and the charm of novelty, and whoever penetrates into its lovely recesses may be fairly an object of envy to those who

* * * love to enter pleasure by a postern,
Not the broad popular gate that gulps the mob.

On asking our host whether it would be possible to get any sort of conveyance to Belgodere, where we might catch the diligence to Calvi, he at once said that he would willingly drive us in his own trap all the way to the latter place for 20 francs—not a high price for a distance of $81\frac{1}{2}$ *kilomètres*, or 51 miles. So at 8 o'clock on the morning of the 8th we set out in a sort of gig, something after the fashion of a Neapolitan *carretta*, without other bottom than a stout cord netting, which might be admirable for cabbages, turnips, or pigs, but proved less adapted for the long shanks of poor François, who somehow stowed himself away in it, whilst M. Maria and I occupied the seat, the former sitting on the left.

If I were to permit myself to dwell in detail on the exquisite variety and charm of the drive, especially after quitting the *route forestière* a little E. of the hamlet of Palasca for the splendid *route nationale* from Corte or Bastia to Calvi viâ Ponte alla Leccia, I should wander far from the main purpose of this paper. Valery, Gregorovius, Lear, and others have done justice to its wonderful beauty, and the last truly remarks that 'those who visit Corsica without going through upper Balagne remain ignorant of one of its finest divisions,' adding, 'no description can exaggerate the beauty of this remarkable tract of mountain background and deep valley, which for richness of foreground, cheerful fertility, and elegance of distance may compete with most Italian landscapes.' The district is densely populated—at least 12 large villages are situated on the road itself between Belgodere and Lumio, a distance of 33 *kilomètres*, or 21 miles—and picturesque hamlets with lofty campanili perch high up on the mountain slopes or crown the summits of the lower hills, whilst everywhere there is the richest culture and most varied produce, and the charm of the picture is completed by continually varying views over

* * bowery hollows crowned with summer sea.

The weather, unfortunately, continued very cold and windy, and a succession of sudden but brief storms of hail and rain swept down from the mountain ridge on our left, but the sun shone brightly on the plains below, and on the sea beyond covered with white-capped waves, and picked out point after point in the landscape with vivid lights. So, though we shivered as we faced the bitter blast—the thermometer fell to 47° Fahrenheit even at Calvi—there was a charm in the war of the elements on that

* brave June morning when the bluff north-west
Brimmed the great cup of heaven with sparkling cheer
And roared a lusty stave.

At Belgodere, which we reached at 10.30 (2½ hours from Olmi Cappella), we halted for a short time, and François contrived to procure and insert a plank whereon to sit a fraction less uncomfortably than before. Then proceeding again till 12.30 we pulled up for dinner a little short of Feliceto, at a roadside house which our Jehu said he always patronised, because both horse and man got well and cheaply served there. Here we stayed till 2 and had a very amusing time, as our host and some lively young Italians kept up a continual storm of chat and chaff, and Angelo Maria made himself very much at home. Whether his potations were too deep, or whether he was anxious to show off before his friends and their guests, I don't know, but when we at length started he whipped his horse into a canter, though there was a long descent before us, and then, in spite of my remonstrances, continued lashing the poor animal until it became quite frantic and dashed down the hill at a furious gallop. Maria now lost all control, and suddenly the wheel on my side bounded up and over a pile of stones, tipping the vehicle violently, and jerking him out. Still more frightened, the horse continued his headlong career, and François and I found ourselves flying along perfectly helpless with the reins trailing on the ground. I climbed cautiously over the back of the seat, planted myself firmly on a rail behind, lowered myself cautiously, and, still holding on, ran for a few yards, thanks to which precaution I did not fall, though almost thrown on my face when I let go. François went flying on for another hundred yards or so, and then the poor scared beast stopped, and I found that F. had cleverly hooked the reins with an umbrella, treated the horse to the customary p-r-r-r-r! which is Corsican for 'woa!' and at once arrested him. We turned back and soon met our crest-fallen companion, who was not much the worse for his tumble, though limping a little and somewhat scratched and bleeding about the nose, forehead, and knuckles. I am afraid we did not pity him much, and when he made light of the matter and, quite forgetful of the helpless condition in which he had left us, professed that he had sprung out intentionally, adding with ludicrous gravity, '*si je n'avais pas quitté ma place, je ne serais pas tombé,*' the statement was received by us with much mental reservation. No further mishap occurred, but every one who travels in Corsica by carriage may calculate on some similar awkward accident or adventure about once a week, thanks to the generally inferior stamp of horse and carriage, and the seemingly incorrigible brutality of all native drivers. At 6 we reached Calvi, picturesquely perched on its pro-

montory and commanding charming views of mountain and sea. In Bradshaw's elegant phrase—'Calvi, at the N. end (!) of the island, is a quiet town among very fine scenery. Nelson was bombarding it when he lost his right eye.' The town, however, suffered still more than Nelson, and the increasing prosperity of Ile Rousse at its expense has left it a very dull and dead-alive place indeed. It disputes with Cogoletto, near Genoa, the honour of having given birth to Christopher Columbus, and a *gendarme* and commercial traveller who were supping at our inn asserted that some document had been found that very week in the municipal archives which incontestably demonstrated the justice of the local claim.

We visited the old town within the *enceinte* of the fortress—a mixture of Pendennis Castle at Falmouth and the Castello dell'Ovo at Naples with a nest of houses and narrow streets therein—and saw some Arab *détenus*, 30 or so in number, shivering in their thin robes, for it still blew hard—the temperature was only 47°—and on the rocks across the bay the heavy surf dashed furiously, spouting up in jets of spray to a great height. Then early to bed, as I wished to make a good start. I was up next morning between 5 and 6, but owing to delays on the part of our driver—a fresh one, for 'Monsieur Comprenez,' as François had named Maria from his constant use of the phrase, had started for home—we did not get away till 8 o'clock. The day was superb, exquisitely clear, and windless, for

* * * 'over all that shore,
Save for some whisper of the scething seas,
A dead hush fell,'

and the bay formed by the promontory on which Calvi stands was almost as placid as a lake. When, however, we got fairly on the wild *corniche* road along the exposed western coast, the sight was really superbly grand. I never saw a sea hurling itself with equal fury on so grand a shore. The great granite cliffs go down steeply beneath the water, whose deep blue masses smote them solidly with thunderous boom, and then burst into columns of foam 60 or 80 feet high, of which the exquisite whiteness contrasted with the brilliant colour beyond,

* 'as the crest of some slow-arching wave
Drops flat, and after the great waters break
Whitening for half a league.'

The drive to Galeria was desolate and rather dreary, and would have been comparatively dull—for Corsica at least—but for the ever-varying and sublime spectacle presented by

the sea. At 10.45 we halted for $1\frac{1}{2}$ hour, to rest the horse and feed, at a miserable little roadside public called Argentella, close to the Marina di Crovani, a splendid beach composed of beautifully coloured pebbles of granite, porphyry, &c., on which the great rollers were tumbling in grandly. François and I flung ourselves down and filled our pockets with lovely specimens just like a couple of children. At 12 we started again, reaching Olmo above the *marina* of Galeria at 1.30, and at 1.55, after crossing the stream of the Fango by a fine new bridge, turned off to the left from the road leading to Porto and ascended the valley for a distance of about three miles to a point where a *route forestière* comes in from the right, and serves for the *exploitation* of the ilex forest of Perticato, occupying a lateral valley at whose head is a pass (Col de Melza), by which Porto may be reached. Proceeding up this road for a short distance, we again turned off into another which entered it from the left, and after a few minutes' rapid ascent found ourselves at the *maison forestière* of Pirio, which offers the only decent accommodation in the entire valley. Joanne's remarks, which I give in a footnote,* are rather discouraging to a hurried traveller, but I had heard of this establishment at Valdoniello, and determined to seek and, if possible, obtain hospitality for one night. At first the *brigadier*, J. L. Susini, put on rather a grave face and said he was not '*autorisé*,' and that we should have applied to his *chef* at Calvi, and then he would have been charmed, &c. &c. But I found that he knew M. Carli well, and the fact of my acquaintance with the latter soon carried the day, and he made us very heartily welcome and treated us most hospitably, giving us of his best, including a bottle of really choice old wine, and entertaining us with true courtesy. He complained of the extreme isolation of his position and hoped to exchange it for some other post before long, especially as the locality is low, damp, and unhealthy, though the house is surrounded by quite a plantation of *Eucalyptus globulus*—one planted only nine years ago was 18 to 20 inches in diameter and nearly 60 feet high—which had indeed already produced some beneficial effect. François and I strolled up the valley for a mile or

* 'Cette contrée [forest of Filosorma], la moins fréquentée de la Corse, à cause de la difficulté du parcours, offre cependant les aspects les plus grandioses et les plus sauvages. Elle ne peut être visitée qu'avec le secours d'un guide, et l'absence de toute habitation oblige à emporter avec soi une tente de campement et de nombreuses provisions.'

so through the fine ilex forest, and at 6.15 returned to supper, during which we had much lively and interesting talk with the *brigadier*, who said he seldom had any visitors, but that an Englishman had stayed there for a night last year. This proved to be Mr. J. W. Barry, of York, whose acquaintance I have since had the pleasure of making, and who is engaged in a work—'Forest Tours and Studies'—which will describe his five months' rambles in Corsica, and will, I hope, be published next year.

The weather looked very uncertain, and the morning of the 10th was most unpromising, but we started at 5.30 with a boy whom our host let us have as guide and porter, intending, if possible, to cross the Cols de Capronale (4,495 feet) and Guagnerola (6,027 feet) to Valdoniello, and reconnoitre the Paglia Orba (8,284 feet) *en route* with a view to an ascent. The road—a *route forestière*—ascending almost imperceptibly for several miles, keeps to the right (true left) side of the valley, which at a distance of two and a half to three miles from Pirio, and above the miserable hamlet of Manso, across the Fango and beneath the Punta al Corba, separates into two branches, each displaying a noble background of granite peaks of fantastic outline and splendid colouring. From the northern arm a pass (the Col Pittinaja, 5,200 feet) leads to the valley of the Ficarella, and so to Calvi, and it is possible that a passage might also be effected farther to the S.E. into the head of the valley of Asco. At the head of the more southerly arm, up which our course lay, is the Col de Capronale (4,495 feet), connecting the valley of the Fango with the head waters of the Lonca, which enters the sea at Porto. The scenery in both branches is of a high order of beauty and grandeur, the following being the principal peaks, beginning from the N.E., near the Col Pittinaja, and working round to the Col de Capronale on the S.E.:—Capo al Ceppo (6,427 feet), Capo Meta di Filo (5,870 feet), Capo Penne Rosse (6,503 feet), La Mufrella (7,047 feet), Capo Stranciacone (6,791 feet), Pte. de Scaffa (6,017 feet), Punta Minuta (8,356 feet), Capo Tighietto (7,352 feet), Capo Uccello (7,139 feet), Paglia Orba (8,284 feet), Capo Tafonato (7,687 feet), Capo Rosso (6,703 feet), Campo Razzino (6,329 feet), and Capo alle Giargiole (6,900 feet). As the valley at the point where it bifurcates cannot be more than 500 feet above the sea, and the summits of the most distant peaks in sight are within $6\frac{1}{2}$, and those of the nearest within $3\frac{1}{2}$ miles, it will be seen that they must present a very imposing appearance, rising as they do so abruptly from so low a level.

The road now bore round to the right, and we soon found ourselves ascending the S.E. arm of the valley, having in front of us a range of noble crags which seemed to bar the head of it, whilst the ilex forest of Filosorma covered the lower slopes, and formed with its exquisite verdure a striking contrast to the red granite and purple porphyry of the surrounding mountains. There had been several showers up to this time, but now the rain obligingly held off, and the mists drew away from the higher peaks, disclosing a mantle of fresh snow which added greatly to their beauty and apparent height. To our left the grand and most picturesque mass of the Capo Tafonato (7,687 feet) towered up like a dolomitic peak, and we clearly made out the huge hole (visible also from near Pirió) which traverses it, and through which the sky looked like a patch of snow. It seemed to me greatly to exceed in size the well-known Martinsloch, and to be the finest specimen of its class with which I am acquainted. After making a great bend to the right up a lateral valley descending from the Capo alla Madia (5,318 feet), whose N. and W. flanks are clothed with the forest of Perticato, we entered the forest of Filosorma, and, zigzagging up more steeply through its noble trees, reached at 8.20 the solitary *maison cantinière*, which must be about 2,200 feet above the sea, as an aneroid observation made it 2,275 feet below the Col de Capronale (4,495 feet). Here, in case of need, it might be possible to get shelter for the night, but provisions must be brought, as they cannot be calculated on, and I doubt whether the house is inhabited before the beginning of June. We halted for a second breakfast till 8.55, and then continued the ascent by a well engineered, but in places somewhat damaged, Gemmi-like path, built up or blasted in many windings through the most superb masses of porphyry, the colours of which were rendered more vivid by the damp of the morning. Gradually we came to the region of pines, and, though there were none of great dimensions, the exceeding picturesqueness of their forms and positions added greatly to the charm of this uncommonly grand and beautiful pass. On reaching the summit at 10.25 a splendid distant view of the Gulf of Porto opened out before us to the right, but there were unmistakable signs of the approach of a heavy storm; so we hurried down the bare and somewhat uniform and unpicturesque slopes in a nearly easterly direction, traversing the stream of the Lonca about a mile below its source, and reaching at 11 the Bergerie de Puscadia (?) (height about 3,600 feet, as my aneroid reading makes it about 900 feet below the col), a wretched hovel, roofed with

earth, just as the storm burst and the rain descended in torrents, gradually turning to hail and snow. We found some miserable peasants, pigs, goats, and a mule crouching for shelter in the dark and sooty interior, but whether they had arrived with a view of taking up their abode in it, or, like ourselves, had merely sought shelter, we could not make out, as they were too drowsy and sodden for conversation, and looked more like over-boiled tea-leaves than human beings. We administered some wine to a poor woman of the party, and soon lighted a bright fire of *laricio* branches, whose rich store of resin seems proof against any ordinary soaking, and gives out great heat. How long we too should have crouched, and dozed, and smoked, and been smoked in turn, there is no knowing, had not the water at length penetrated the earth roof in so many places and such large quantities as to leave not a dry spot for the soles of our feet, and driven us into the open at 1.30. Here we found appearances improving, but everything at our elevation was covered with two or three inches of fresh snow, which grew much deeper as we advanced and at length amounted, with what had fallen during the previous days of storm and cold, to about $1\frac{1}{2}$ foot—a most extraordinary occurrence for Corsica in mid June! Mists were crawling up the valley behind us, and drifting through the great boughs of the splendid cedar-like pines of the forest of Lonca, which for beauty of form exceeded any we had previously seen, though we learned afterwards that lower down this once noble forest had suffered terribly from incendiary fires, which are the bane of Corsican woods. The shepherds, eager to increase the area of pasturage, which is very deficient in the island, make no scruple about setting fire to acres of *Pinus laricio*, whose ashes stimulate a rich vegetation, and thus property to an immense value is annually sacrificed, and the offenders seem never to be found out, or at any rate punished!

As we plodded upwards through the silent snow the red granite boulders which strewed the valley bottom stood out in strong contrast to the white covering, and looked, as respects colour, like so many raspberries dropped into cream. The crags and *aiguilles* here assumed the wildest and most bizarre forms, rivalling some of the finest dolomitic scenery, and as the clouds wreathing themselves around them slowly drew away and disclosed the higher summits—Capo alle Giargiole (6,900 feet), Capo di Guagnerola (6,404 feet), Le Forcelle (6,762 feet), and Capo alla Cuculla (6,732 feet)—seen above and between the huge pines, it would not be easy to imagine any-

thing more picturesque or magnificent. It was heavy work wading through the deep, soft snow, and the last 1,000 feet of ascent were sufficiently steep, as it was not always possible even for François' skill to keep to the zigzag path, but as the weather held up there was no occasion for hurry, and at 3.20, 1½ hour from the *Bergerie*, we stood on the Col di Guagnerola (6,027 feet). Behind us the woody depths of the valley of the Lonca looked black as ink beneath the heavy canopy that brooded over it, whilst in front the summit of the Paglia Orba was, except at rare intervals, covered with clouds, and it was impossible to scheme out a complete route, as we had hoped to do, from this elevated and favourable point of view. We saw enough, however, to lead us to believe that this side (S.W.) was the most promising direction of attack, though, in the actual state of the snow and the prospects of the weather, an attempt on our part was out of the question. As there is a conspicuous stone man on the summit, and the name on the *Carte de l'État Major* is followed by the letters 'S^{al}' (Signal), it is obvious that the ascent has been already effected, but when or by whom I have not heard.

We stayed on the col till 4.30, and, though the view never wholly cleared, we saw it very fairly in detail and bit by bit. I had remarked to François that the extraordinary fall of snow must drive down the *moufflons* to the lower levels in search of food, and that if we kept a sharp look-out we might chance to see some. Just as we reached the col, I thought I heard something like a faint bleat, and whilst we were on it both François and I felt sure that it was repeated; so when we started for the descent we kept our eyes well open, and had not gone many hundred feet when F., who was in front, began to gesticulate violently, and on looking up to our left I saw two animals near the summit of the arête connecting the col with the peak of the same name which rises to the N. of it. They remained there quietly watching us for nearly ten minutes, and only scampered off when, being obliged to push on, we raised a shout. The larger of the two was a ewe and the smaller a quite young lamb, which at first seemed to have such difficulty in getting through the soft snow that our boy imagined he might be able to catch it, and asked leave to make the attempt! The peaks at the heads of the valleys of Niolo, Lonca, Filosorma, Ficarella, Tartagine, and Asco are the wildest and least frequented or disturbed in the island, and must, I imagine, be the headquarters of the *mouflon*, and it was very interesting thus to see specimens in their citadel, a southern 'Festung der Gernsen Freiheit.'

All traces of the track became finally lost beneath the snow, and we managed to miss the right spot at which to cross the torrent, and so kept too long, I fancy, to the right bank, thus losing time in some unnecessary scrambling and subsequently in an attempt to make straight tracks for the *maison forestière* through the northern portion of the forest of Valdoniello. Thus three hours passed away, and bogs and streams had to be crossed and forded before we reached our destination. We were heartily welcomed by the friendly inmates, whilst some goatherds from Galeria, recognising our young companion, and learning from him whence we had come, proffered their brimming pails of fresh goats' milk and patted us on the back and brought more when they saw any tendency to leave off drinking. I may remark that in Corsica I almost uniformly found the goats' milk free from the rank flavour which is usually associated with it, and, though it is less rich than cows' milk, it is a very tolerable substitute for the latter. The evening was passed merrily over conjuring tricks, magnesium wire, and a good dance of woodcutters, shepherds, &c., in which an old fellow between 70 and 80 years of age greatly distinguished himself, and when at last I slipped off to bed at 11 the fun was still going on fast and furious. So *l'on s'amuse* in Corsica, though their songs, like those of Greek peasants, are more like an Arab croon, and I never saw any game except cards, and there seem to be no outdoor village sports, such as pallone, bowls, &c., as in Italy.

The next morning we proceeded once more down the valley to Casamaccioli, as the state of the snow was not tempting for an attack on the Paglia Orba, which is a fine object from the slopes above the village. Thence we crossed the picturesque and interesting pass of the Bocca di Fontana Rimella (5,866 feet), traversed the fine pine forest of Melo, and descended by the grand ravine of the Tavignano to Corte, the ancient and central capital of the island, and were soon revelling in the comforts and luxuries of M. Pieraggi's excellent hôtel. It may be worth while to mention that M. Giovanetti, a highly skilful *armurier*, whose shop is on the upper side of the Piazza Paoli at Corte, makes exquisite specimens of the genuine Corsican stiletto at very reasonable prices. The blades are manufactured by himself out of old English files, and he mounts the ebony handles and sheaths very tastefully in silver. A little way up the main street, above and on the same side as the Hôtel Pieraggi, is a general shop kept by a pleasant fellow a '*continental*' or Frenchman, as opposed to a Corsican or '*insulaire*'—named Adrien Laboirie, who travels about the country mending umbrellas, doing glazier's work, and under-

taking all sorts of odd jobs. He has thus acquired a considerable acquaintance with many parts of the island, and as he possesses a mule and a decent but rough trap, and only charges ten francs a day (exclusive of return if dismissed at a distance from home) for their use and his own time, I found him and his vehicle a very convenient addition to our forces during that part of my route (between Corte and Bavella) which was over ground traversed by *routes nationales, vicinales, communales, or forestières*.

It may be of interest to mention that the largest *Pinus laricio* I actually saw (in the Valdoniello forest) measured 13 feet in circumference, and the largest chestnut (in the woods above Zicavo) 33 feet, whilst higher up on the slopes of Monte Incodine we traversed a noble beech wood—referred to by Mr Freshfield—the trees of which were enormous, one being about 8 feet (by estimation) in diameter. Mr. Barry tells me that he met with none as large as this last in the island, but in another part of the Coscione forest he measured a double one, the diameter of one stem of which was $5\frac{1}{2}$, and that of the other $3\frac{1}{2}$ feet. He also measured a chestnut which was 39 feet in girth. Trees of the latter species 5 to 6 feet in thickness are abundant in the 'Castagniccia,' and trunks of even 7 and 8 feet are by no means rare, whilst the trees are no less magnificent in height and spread, towering up 70 or 80 feet, and rivalling our finest elms in appearance and bulk.

For the benefit of any one who may like to have an idea of a route which, without by any means exhausting the objects of interest in Corsica, enabled me, I think, to see it pretty thoroughly, I append my itinerary; whilst for those who may care to devote a shorter time to the more complete and detailed exploration of the wild and as yet little visited but most attractive N.W. corner of the island, the following suggestions for a shorter campaign may be useful.

SUGGESTED EXPLORATION OF THE N.W. CORNER OF CORSICA.

1. (*Monday.*) From Marseilles at 9 A.M. by steamer to Calvi.
2. Drive from Calvi to Calenzana, thence walk to Zilia, and cross the Bocca di Cineraggia (4,698 feet), ascending peak of same name (5,286 feet) en route, and proceeding by the Bosco di Millaja to Olmi Cappella.
3. By the Bocca Pianile (5,033 feet) to Feliceto, and thence to Speloncato. (There might be time also to drive to Ile Rousse and back.)
4. By the Bocca Croce d'Ovo (3,629 feet), or Bocca di Battaglia

- (3,550 feet), to Olmi Cappella, and thence to sleeping quarters (*maison forestière* or *baraque*) in forest of Tartagine.
5. By Bocca de l'Ondella (6,086 feet) to Asco, or sleeping quarters (if any ?) in upper part of valley.
 6. Ascend Monte Cinto (9,239 feet) and to Valdoniello (*maison forestière*).
 7. (*Sunday*.) At Valdoniello, and perhaps camp out for Paglia Orba.
 8. Ascend Paglia Orba (8,284 feet), and cross Cols de Guagnerola (6,027 feet), and Capronale (4,495 feet) to *maison cantinière* at N. foot of latter, in ilex forest of Filosorma.
 9. Recross Col de Capronale to forest of Lonca, and reach the *maison forestière* of Pirio (a few miles above Galeria) by the Bocca al Vergiolo (2,917 feet) and Col de Melza (? feet).
 10. By Col di Pettinaja (5,200 feet) and Bocca di Tartagine (6,093 feet) to Olmi Cappella.
 11. To Ponte alla Leccia, by Castifao, or by the Bocca Pietrella (4,062 feet) and Asco, and thence to Morosaglia to sleep.
 12. Ascend Monte S. Pietro (5,443 feet) from the Col de Prato (3,215 feet), and descend to Stazzona, above the Baths of Orezza.
 13. To Bastia, and off at night by steamer to Nice (12 hours).

The published (August 1881) sheets of the *Carte de l'État Major*, which include the greater part of this district of the island, are 260. Calvi, 261. Bastia, and 262. Vico.

There is also a fine map of the entire island in four very large sheets, on a scale of 100,000, which in some respects is superior in execution to that of the *État Major*, though unprovided with hypsometrical information except in the form of a tabular statement, and necessarily omitting the numerous and fine roads constructed since it was published. The title in full is 'Carte topographique de l'Île de Corse, dressée par ordre du Roi, d'après les opérations géodésiques et les levées du cadastre exécutées de 1770 à 1791 et dirigées par feu MM. Testevuide et Bedigis, gravée au Dépôt général de la Guerre, à l'échelle d'un mètre pour 100,000 mètres, terminée sous la direction de M. le Comte Guillemot, Lieutenant-Général, Pair de France, Directeur du Dépôt général de la Guerre, et publiée sous le Ministère de S. E. Mon. le Baron de Damas, Pair de France, Secrétaire d'État au Département de la Guerre. Paris, 1824.'

APPENDIX.

ITINERARY.

May

15. Left Marseilles by Fraissinet Company's steamer at 9 A.M.
16. Reached Bastia at 3.30 A.M. Drove (and walked) to Luri and Pino (Cap Corse) by Col de Ste. Lucie (1,253 feet), visiting monastery and 'Seneca's tower' en route, as well as the Grotto of Brando.

17. To Morsiglia above Centuri and Col (Bocca del Molino) between it and Ersa, returning to Pino by Morsiglia, and driving in the afternoon to Nonza.
18. Drove to Bastia by Col di Teghime (1,775 feet).
19. To Baths of Orezza (Stazzona) by Vescovato, Venzolasca, and Silcareccio, driving as far as the bridge over the Golo.
20. To Ponte alla Leccia on foot by the Col di Prato (8,215 feet) and Morosaglia, and then by diligence to Corte.
21. Drove to Vivario, and thence walked to Ghisoni by the Bocca di Sorba (4,255 feet).
22. Drove to Zicavo by the Foce di Verde (4,288 feet).
23. Ascended Monte Incodine (6,746 feet), and descended on the S.E. side to Zonza (2,362 feet).
24. To the forest of Bavella on foot, by Foce di Bavella (4,068 feet), and back to Zonza.
25. To the forest of Ospedale on foot, by a Pass (Foce Alenata ?) S.W. of the Pta. della Cava, and thence to Porto Vecchio, driving in the evening to Bonifacio.
26. At Bonifacio. Visited marine caves, &c.
27. By diligence to Sartène and Olmeto, crossing Col di Croce d'Arbitro (1,181 feet).
28. Drove to Cauro by Col di Celaccia (1,890 feet) and Col S. Giorgio (2,493 feet).
29. To Bastelica on foot, and at ditto.
30. To Bocognano on foot by the Bocca di Scalella.
31. To the Foce di Vizzavona (3,757 feet), and back again on foot to Bocognano, and thence drove to Ajaccio.

June

1. At Ajaccio. Visited environs, &c.
2. To Vico by diligence, viâ Sagona, and Cols de Listincone (784 feet), S. Sebastien (1,362 feet), and S. Antoine (1,627 feet).
3. Drove to Cargèse and Pianà by Col de la Croix (1,371 feet).
4. Drove to Porto and Evisa (2,740 feet), and thence visited the 'Spelunca.'
5. At Evisa, and to Valdoniello on foot by the Col di Vergio (5,026 feet), traversing the forests of Aitone and Valdoniello.
6. At Valdoniello (3,589 feet ?) *maison forestière*, and to Albertacce and Calacuccia.
7. To Asco by Corscia and the Bocca di Bellavona (6,500 feet), and thence by the Bocca Pietrella (4,062 feet) to Olmi Cappella (2,723 feet).
8. Drove to Belgodere and Calvi by the Col di Bocca Croce (3,048 feet).
9. Drove to Galeria and the *maison forestière* of Pirio.
10. To Valdoniello by the Col di Capronale (4,495 feet), and Col di Guagnerola (6,027 feet), traversing the ilex forest of Filosorma and upper part of the pine forest of Lonca.
11. To Corte by Casamaccioli, the Bocca di Fontana Rinella (5,866 feet), forest of Melo, and valley of the Tavignano.
12. Up the Val di Restonica to the Bergerie de Timozzo.

13. Ascended Monte Rotondo (9,068 feet), and descended on the S.W. side to the Baths of Guagno.
14. To Azzana (Val di Cruzzini) by the Bocca di Campedoggio.
15. To Bocognano by a Pass to the S.E. of Azzana, and on to the Foce di Vizzavona (3,757 feet).
16. Ascended Monte d'Oro (8,701 feet); descended by a new and very direct route, and proceeded in the afternoon by diligence from the Foce to Vivario and Corte.
17. To Sta. Lucia, and thence, passing the chapels of S. Antonio and S. Pancrazio, and traversing several ridges and spurs, reached Pietricaggio in the valley of the Alesani, and descended the latter to Cervione.
18. Drove to Bastia, and left at 7.45 P.M. by steamer for Nice.
19. Reached Nice at 8 A.M.

THE NORTH DISTRICT OF THE SAAS GRAT.*

BY W. M. CONWAY.

SWITZERLAND abounds in neglected districts. Such, however, for the most part, lie round sequestered valleys and are invisible from the principal roads. The pedestrian is ignorant of the names of their peaks, and the cockney climber shuns them as he shuns all secondary summits. But that a group of mountains should be in full view from the most frequented pathway in Switzerland, and that they should to this day be almost as unknown as the Caucasus to the climbing world, is a somewhat noteworthy fact.

The following article is intended to call the reader's attention to that part of the Saas Grat which lies north of the Dom. A few words on the nomenclature and arrangement of the peaks which fall within the district may serve as introduction. The great Mischabel ridge, culminating in the peaks of the Dom and Täschhorn, runs in the main north and south. With a copy of the Federal map before him, the reader will see that, proceeding northward from the Dom, the ridge sinks considerably, to a point marked 4,167 *mètres*—the Nadeljoch—and then rises once more to a peak, 4,300 *mètres*. This is the Südlenzspitze (*Südlenendspitze*, or *Landspitze*), seen on the right in the photograph which accompanies this article. It is a three-faced pyramid, conspicuous from Saas, its eastern ridge forming the northern boundary of the great Fee glacier. After passing this

* The autotype illustrating this paper is from a negative taken by Mr. W. F. Donkin, to whom I wish to express my warmest thanks for his courtesy.

peak the main ridge bends to the north-west, and shortly rises to the Nadelhorn (4,334 *metres*), so named, I believe, from a hole through its summit. This is the only one of the peaks of the district which is visible both from the Zermatt, the Saas, and the Gassenried valleys. It is invisible from Zermatt itself, but its highest point may be seen from the Riffel like a black knob on the western *arête* of the Dom, and it is also conspicuous from the mule-path at the mouth of the Z'mutt Thal.

At the Nadelhorn the main ridge divides into two, one of which runs north-east, sinking rapidly to the snow-dome called Ulrichshorn, the other continues in a north-westerly direction, under the name of the Nadelgrat, and forms the south-western boundary of the Gassenried glacier. Passing along the Nadelgrat (the whole of which is seen in the photograph) we come next to a sharp nameless peak, which might be called the *Stechnadelhorn*, and which, according to the measurement of Messrs. Burckhardt and Schulz, attains a height of 4,235 *mètres*. The next peak is that marked 4,226 *mètres* on the Federal map, in the new edition of which it will be found to bear the name Hohberghorn. Of the two snow-peaks visible from Zermatt to the left of the Dom this is the right-hand one. It has long been called Nadelhorn by the Zermatt guides, and often ascended as such. At this point the Nadelgrat ridge divides into two; of these branches the former, broken at one point to allow of the passage across it of a tiny glacier—the Ober-Hohberg glacier—runs almost due west, and is called the Dürrenfäd; the other, retaining the original direction of the Nadelgrat, sinks to a col—the Hohberg Pass—at the head of the Ober-Hohberg glacier, and then rises again to the peak, 4,035 *mètres*, which for the future is to bear the name Dürrenhorn. This is the second of the two peaks seen from Zermatt. The ridge now sinks rapidly to a col (3,240 *mètres*) called Galenjoch, rises slightly to a rounded grassy peak, Galenborn, seen below on the left in the photograph; and then, turning almost due north, falls to the valley at St. Niklaus.

Passing north-east from the Nadelhorn, along the sharp snow crest which looks down on to the steep Hochbalm (Hochbalm) glacier, the next summit reached is the Ulrichshorn. Beyond this the ridge sinks rapidly, just humping itself up in one place into an insignificant summit called Gemshorn, and finally doing duty as the southern barrier of the Bider glacier. A rounded snow ridge, scarcely visible as such, starts from the Ulrichshorn, and trending northwards rises once more considerably to the last real mountain of the group—the Balfrin (Balenfirnhorn). Here it splits into two—one going

somewhat west, the other somewhat east of north. The former rises into several fameless peaks and sinks to as many neglected cols, and finally descends in the valley below the grass slopes of Stalden. The latter supports a not inconsiderable snow-field on its back, and holds itself high for some time, but after doing its best to make a fine peak of itself in the Schildhorn, its strength fails, and it rapidly disappears. Between the two lies the steep Balfrin (Balfirn glacier) with its icefalls and its plateaux, which those who look can see from the hotel at Visp.

Such is a general sketch of the topography of the district, and it is not unnatural to inquire what expeditions have been made in it, or might be made—an inquiry which the present writer has found to be by no means simple. Certain facts, however, have at last emerged from a vast rubbish-heap of reports and possibilities and may here be recounted in due order, if not for interesting reading, at all events for reference.

The first exploration made in this district seems to have been conducted by Herr Johann Josef Imseng, curé of Saas—a man well known to early climbers,* not unknown, by fame at any rate, to climbers of the present generation; represented by those who knew him as a hearty, genial fellow, with a warm welcome ever ready. A strong, cheery man, and a daring chamois-hunter—we can picture him without difficulty, clambering about his native hills, alpenstock in hand, with his cassock tucked up. Originally curé of Randa, and afterwards transferred to Saas, he spent the rest of his mountaineering existence in trying to find routes from the one valley to the other, or to reach the summits of the dividing ridge. He was the kind of man to assemble his fellow-clergy, bound for a meeting at Zermatt, and to lead them thither by a glacier-pass, some eleven in all—(what would not we give to have seen them!)—is it not written in the hotel-book at Mattmark, so that he who knows a smattering of Latin may read?

It appears that Imseng had made certain expeditions about the Hochbalen glacier and the Gemshorn rocks in pursuit of chamois, which convinced him that the upper level of the Gasenried glacier might be reached from this side. All that remained was to find a traveller and his guides to accompany him.

In 1848 Professor Ulrich, of Zürich, paid his second visit to the Saasthal.† Imseng proposed to him that they should ex-

* See Wills' 'Wanderings,' p. 120; Studer, ii. 52 note.

† See, for an account of this expedition, Melchior Ulrich, 'Seitenthäger des Wallis und der Monterosa,' Zürich, 1850, 8vo. p. 57; also Studer, 'Ueber Eis und Schnee,' Bern, 1869, vol. ii. p. 57.

plore the new pass together, which he willingly agreed to do. The curé brought his 'Knecht,' Franz Audermatten; the Professor had with him as guides Stephen Binner and Matthew zum Taugwald. At 5 A.M. on August 10, they started off from Saas, crossed the stream, and ascended rapidly amongst the trees to the Hanig Alp, reaching it in one hour. From this point they followed a 'Wasserleitung,' which led them up a stony valley lying between the Melligberg and the Distelberg. It brought them to a side glacier which flanks the Hochbalen glacier on the north. They crossed the ice without difficulty and got on to the foot of the curtain of rocks which forms the south-east face of the Gemshorn. It was climbed, it would appear, without much difficulty, and the watershed was reached at 10.30 A.M. A steep snow slope led in little more than an hour to the summit of the peak south-west of the col, to which the name *Kleine Mischabel* had previously been applied in the Saas valley. It has since been known as the Ulrichshorn.

The view appears to have been very fine. Deep below their feet lay the Fee glacier, encircled by a noble range of domes and peaks; beyond rose the mass of Monte Rosa—very mysterious in those days. Two of the Mischabelhörner looked down on the party from the west; they seemed to them to be inaccessible. One of these peaks they thought to be the Dom, but they were wrong; it was the Nadelhorn. Turning to the north the whole range of the Oberland in uninterrupted succession stood before them behind the Balfrin.

Before turning to descend to the col they took a barometric observation, which gave 12,323 Paris feet as the height of the summit; they built a stone man and brought away specimens of the mica-schist of which the upper part of the mountain is composed. They returned to the col, where they had left their packs, and then turned down the *névé* of the Gassenried glacier and descended it without difficulty for an hour. Their further advance was stopped by a great ice-fall, which, however, they succeeded in turning by a slope of snow broken by rocks, and cut off below by a bergschrund, which caused considerable delay. They found it easy to descend the second level of the glacier for an hour more, but they were once more brought up by an ice-fall. With considerable difficulty they clambered down the rocks by its right side, and thus reached the lowest level of the glacier. They now crossed to its left bank, climbed over the moraine, and descended a small valley between it and the hill-side in which the Schallbetalp lies. Hence they followed an aqueduct to the hamlet of Höllenen, and

descended to St. Niklaus by steep grass slopes and through woods. They reached the village at eight o'clock in the evening, after an expedition sixteen hours long. This was the first passage of the Ried Pass.

For some years it seems hardly to have been visited at all. Mr. Leslie Stephen crossed it, and his notes on the route to be followed in descending the Gassenried glacier may be found in the 'Alpine Guide.'* He seems to have followed a different line from that taken by Ulrich, bearing always to the left, and keeping along the northern slopes of the Nadelgrat. The best route was pointed out by Mr. A. W. Moore, and has been constantly followed since. It lies at first close along under the Balfrin till the great ice-fall is passed, then it crosses the glacier (seemingly involving a great *détour*), and follows first the left moraine, then the little valley between it and the hill-slope beyond. A fair track leads from the highest Alp to St. Niklaus. either by the village of Gassenried or by Höllenen. The disadvantage of the pass is, that for one hour after leaving the ice you must go over tiring *débris*.

Another pass from Randa to Saas was discovered in 1863 by Hieronymus Brantschen (the first man to ascend the Brunegg-horn) and P. J. Sommermatter. They gained the Hohberg glacier from Randa, mounted it for some distance, and then, striking up to the left, crossed the ridge of the Nadelgrat at a gap which lies north of the Hohberghorn (4,226 *mètres*). This is the Hohberg Pass. They descended on to the Gassenried *névé*, and reached Saas by way of the Bider glacier and the Gemshorn rocks.† The pass never seems to have been used since. It must command magnificent views.

The Nadeljoch‡ was discovered by Mr. G. E. Foster and Mr. Horace Walker in 1868. On the morning of July 16 they left Saas at 2.30 with the guides Jacob Anderegg and Hans Baumann, and mounted to the Fee chalets. About an hour and a half above these they took to the left branch of the Fee glacier, and crossed it to a buttress of the Südlenzspitze. This they ascended without difficulty, passing two little grass slopes on the way. On their left was an impassable gorge, down which dashes the stream from the glacier above. The gorge was crossed near the top of the buttress, and the rocks were exchanged for snow-slopes, broken by a few rocky ledges. The greater part of the ice-fall was now below them, but the glacier was still too much

* J. Ball, 'Western Alps,' London, 1875, 8vo. p. 360.

† Studer, 'Ueber Eis und Schnee,' ii. p. 59.

‡ 'Alpine Journal,' vol. iv. p. 365.

crevassed to admit of their making straight running for the col. They therefore continued to mount the snow-slopes till they reached the foot of a secondary glacier descending from the Südlenspitze. They crossed it in half-an-hour, during which time they were in some danger from ice-avalanches. Then they bore far to the left, over the main glacier, and at 10 o'clock reached the foot of a buttress of rock, which runs down the middle of the face between the Dom and the Südlenspitze. Here they paused for breakfast, and looked at the great wall 1,500 to 2,000 feet high, at the top of which lay the pass. The ascent of this wall took them three and a-half hours. They followed the buttress till it came to an end about half-way up, but the rocks above were of the same character—'stiff enough to demand careful climbing, though nowhere really dangerous.' The col lies between the Dom and the Südlenspitze. The descent lay at first down a snow-slope, which gradually became steeper. To avoid cutting steps they bore to the right, crossed some nasty rock-patches, and then struck over the glacier to the ordinary Dom route, by which Randa was reached at 8 P.M.

The first attempts to ascend the Dom were made from the Saas side; of these again Herr Imseng was the life. In 1856 Mr. Chapman, guided by Johann zum Taugwald, climbed from Saas to some considerable altitude, but there seems no reason to suppose that he reached the summit of any of the high peaks; at all events, he returned without having gained the point for which he was aiming.*

Before all the various peaks of the Mischabel had been ascended there existed certain differences in the names by which they were called in the Saas- and Nicolai-thäler. Thus at Saas the point 4,334 *mètres*, now called the Nadelhorn, was known as the Dom, whilst the real Dom was called the Grossthal Dom. Which of these two summits was the highest was not then decided, and attempts were usually made from Saas to reach the Nadelhorn, but from Randa to climb the real Dom.

The first ascent of the Nadelhorn is described in the 'Walliser-Wochenblatt' of October 2, 1858, but it is there announced as an ascent of the Dom.† The party consisted of Herr Imseng, J. Zimmermann of Visp, Al. Suppersax, Baptist Epinay, and Franz Andermatten. Imseng had previously, on August 2 of the same year, made an attempt

* Studer, 'Ueber Eis und Schnee,' ii. p. 52.

† Ibid. p. 53.

on the mountain, and been driven back by the weather when he had climbed as far as the Ulrichshorn. They started from Saas by lantern-light at midnight on September 16; they ascended to the hamlet of Fee, and thence by the higher alp to the Schwarzhorn, where they had prepared a wooden signal-pole to plant on the summit of what they believed to be the highest peak of the Mischabelhörner. Taking this with them and attaching themselves to the rope they struck across the Hochbalen glacier, and ascended to the crest of the ridge connecting the Ulrichshorn with the Nadelhorn. They had now to turn to the left and follow this ridge to the summit of the peak. The passage of the ridge was very difficult; it lay partly over rocks and partly over snow; the former were glazed, the surface of the latter consisted of hard ice. They had to force their way along the west side of the ridge, keeping below its crest. Often they were obliged to trust themselves entirely to the glazed rocks. At the foot of the *arête* leading to the peak, Herr Imseng and an anonymous companion remained behind, the others continued the ascent, Franz Andermatten carrying the wooden cross. Almost every step had to be cut with the axe, sometimes in frozen snow, sometimes in hard ice. At 2 o'clock they at last reached the summit, and were rewarded by a magnificent view. On the highest point they built a stone man, and planted their wooden cross. Franz Andermatten says you can see it to this day; the writer has tried, but without success. Looking southward they could see the other Mischabelhörner with Monte Rosa over them, and they thought that the point upon which they stood must therefore be the highest of the group. In the descent they counted their steps, and found that they had cut 1,470. There is no doubt that the point which they had reached is that marked 4,334 on the Federal map.

Of one other ascent of the Nadelhorn some dim account reaches me. When Messrs. Hoare and Hulton were standing on the summit of the Dom some time in August 1874, they saw a party on the top of a peak which they feel almost positive was the Nadelhorn; as they neither saw them ascending nor descending they must have come up from Saas. Further I hear that Alexander Burgener was once up the real Nadelhorn with somebody, but cannot find out anything certain about it. The mountain has never been ascended from the Hohberg glacier; the present writer, with Messrs. Scriven and Donkin, was driven back from it this year by bad weather, after having slept out for it at the Festi.

No ascents of the Südlenspitze have at present been re-

corded. It is perhaps the peak climbed from Saas by Mr. Chapman. The Stecknadelhorn has never been climbed.

Passing along the Nadelgrat we come next to the Hohberghorn, a peak which has received its due share of attention, and has created an undue share of confusion. Those who have ascended it have been led to believe that they were standing on the Nadelhorn, forgetting that whilst the former is visible from Zermatt the latter is completely hidden. The first ascent of the peak was made by Mr. R. B. Heathcote in August, 1869. He was accompanied by Weisshorn Biener, Peter Perrn, and young Peter Taugwald. Mr. Heathcote has kindly furnished me with the following particulars. They slept out on the grass slopes above Randa (probably at the lower Dom sleeping-place), and followed the ordinary Dom route till they reached the col which connects the *névés* of the Hohberg and Festi glaciers. They descended on to the former and crossed it, and then mounted rocks to the summit. There they built a stone man, planted a bâton and attached a flag, a ragged bit of which may be seen there to this day, and the bottle with the names in it.

For ten years the mountain was left to itself, till in September, 1879, it was ascended by Mr. B. Wainewright, again by mistake for the Nadelhorn. He has sent me the following account of his expedition: 'The day after the return of Messrs. Penhall and Mummery from their ascent* of a peak of the Nadelgrat, which they thought was the Nadelhorn, we—Imboden, myself, and Joseph Chanton as porter—went down to Randa and walked up to the lower sleeping-place for the Dom. Next morning we started early and ascended the Dom by the usual route. We reached the top early, and the snow being in good order, we glissaded a great part of the way down and regained the Hohberg glacier early in the day. On our way up the Dom Imboden had proposed that we should climb the Nadelhorn (really Hohberghorn) on our way back, and see if it was the mountain that Penhall had ascended; this we determined to do, and left the knapsack on the glacier to await our return. The climb was a very easy one.'

The route was the same as that taken by Messrs. Burckhardt and Schulz on August 30 of the present year. They crossed the Hohberg glacier from the Festi Pass to the foot of a broad couloir, well seen in the photograph descending from the col right of the Hohberghorn; they ascended this, and then the thread of rocks on the left of it, and thus reached the col,

* 'Alpine Journal,' vol. ix. p. 367.

passing along the *arête* thence to the summit. Two hours suffice for the ascent of the peak from the glacier. Messrs. Burckhardt and Schulz found Mr. Wainewright's card in the bottle with Mr. Heathcote's; they also found the bâton and remains of a flag, so that no doubt whatever remains as to the identity of the peak. From the summit 'we now saw,' continues Mr. Wainewright, 'the mountain which Penhall had climbed (the Dürrenhorn). Imboden said that it had been frequently climbed by chamois-hunters, but never before by gentlemen, so far as he knew. A ridge of snow connected it with our peak, and we thought of going on to it, which we could have easily done, sending the porter back to return to Randa with the knapsack the way we had come, whilst Imboden and I crossed the ridge to the Dürrenhorn and descended on the other side by the way Penhall went. Imboden said, however, that it would not be safe for the porter to cross the covered glacier alone, and so, as we had left our knapsack below, we were obliged to give up the plan. We waited a short time at the top, and then descended to the glacier by the same way that we came (ascent and descent having taken three hours including halts), and returned to Randa the same evening.'

Messrs. Burckhardt and Schulz having reached the summit of the Hohberghorn by the route just described, took a different line in the descent. They passed along the west *arête*, and then went down over rotten rocks and a couloir to the lower Hohberg glacier, which they reached in two hours from the top; in one hour more they got off the ice on to the moraine, from which they descended leisurely to Randa. They consider that their times were slow, as the mountain was encumbered by a large quantity of fresh snow in very bad condition.

The ascent referred to as made by Messrs. Penhall and Mummery, with the guide Alexander Burgener, seems, from their description in the 'Alpine Journal' (no attention as usual being paid to the name Nadelhorn), to have been that of the Dürrenhorn. This conclusion has been confirmed by Burgener's express admission. The peak had previously been frequently ascended by chamois hunters, as a chamois track runs right over the top. Unless my memory plays me false, it was also ascended by two Englishmen in 1877. Messrs. Penhall and Mummery's ascent was, however, the first definitely recorded. They slept in the Dürren valley three hours above Randa. From their bivouac they went for two hours up loose rocks, which brought them 'to a small snow-field,' from whence they 'climbed an interesting rock-slope to the N.W. *arête*.' This description coincides exactly with what we should expect in the

case of an ascent of the Dürrenhorn. The stone man which they built is clearly visible on the summit of the peak. They found no traces of any earlier visitors.

The last summit of the main Saas Grat to be climbed was the Balenfirnhorn.* It fell to Mr. and Mrs. Spence Watson on July 6, 1863,† accompanied by Herr Imseng and the guides Franz Andermatten and Joseph Marie Claret. In ascending they reached the summit of the Ried Pass by the couloir and rocks which fall from between the Ulrichshorn and Gemshorn to the Hochbalen glacier. From this point they walked across the upper snow-field of the Gassenried glacier, traversed the west slopes of the Gemshorn, and thus reached the south-east snow *arête* by which the summit of the mountain was finally attained without difficulty. In the descent they went down to the foot of this *arête*, and then took a different route. They turned off in a north-easterly direction along the snow-ridge, which supports the *névé* of the Balenfirn and overlooks the Bider glacier. They followed this ridge for some distance, and then turned down the wall of rocks which falls to the latter. A difficult descent placed them on the snow-field, down which they glissaded, getting off on to its right bank and then descending through the trees to Saas. They did not recommend this route, but advised future travellers to pass round the end of the Bider glacier and ascend the rocks beyond it, striking the ridge at a point somewhat nearer the Schildhorn—a route afterwards taken by the writer.

No further explorations seem to have been made in this district till the year 1878, when, on July 13, I started to cross the Ried Pass with Pollinger and Truffer as guides. We ascended by the ordinary route along the left bank of the Gassenried glacier, taking to the ice above the lower ice-fall and crossing to the opposite bank under the Bigerhorn. This is the route recommended by Mr. A. W. Moore; though apparently involving a *détour* it is by far the quickest. Guides unacquainted with the district usually attempt to descend by the right bank, and thus involve themselves in long and troublesome work over rotten rock-slopes. Last year, when descending this glacier, I had great difficulty in persuading the guides to cross to the left bank, but they afterwards confessed that the route they

* Usually called *Balfrin*, the name attached to it on the Federal map. *Balenfirnhorn* is the peak at the head of the glacier (*firn*) above the village of *Balen*. We have also the *Hochbalen* glacier, written *Hochbalm* on the same map.

† 'Alpine Journal,' vol. i. pp. 188–196.

proposed would have involved the waste of a considerable amount of time.

When the Balenfirnhorn came in sight our attention was called to a col on the left of the summit. We determined to ascend to it, and thence to pass along the north-west ridge to the highest point. A nasty slope of rotten rocks, which took us nearly three-quarters of an hour to surmount, landed us on the col. These rocks should not be attacked too much to the left, but ascended where they are shortest and a tongue of snow runs up into them. The col is a most charming place; there are two little saddles side by side, separated by a small rocky tooth. The view from the tooth is glorious. As you climb, the nasty broken rocks suddenly drop away from before you, and their place is taken by the whole Oberland range—from the Diablerets on the left to the Galenstock on the right—framed between ridges of snow which stretch up right and left to the peaks by your side. At your feet is the Visp valley, the bend of the hill just hiding Stalden. The village of Visp is clearly seen, with its white-walled houses. Turn round and you are met by the marvellous snow-curtain falling from the Nadelgrat to the Gassenried glacier, the peaks standing up before you in regular order. The Dom is hidden, but the brilliant pyramid of the Weisshorn, visible from base to summit, amply makes up for the loss. From no point is this unrivalled snow mountain better seen with the Bies glacier hanging from its slopes.

Looking down on to the Balenfirn a steep slope of snow leads directly from the col, supported on its left side by a wall of rocks; it was clear that these could be descended, but our object now was to reach the summit of the Balenfirnhorn, so bearing in mind the pass as a future possibility, we turned up the ridge to the right. It is broad and gentle, and was surmounted without difficulty in less than half-an-hour. The view from the summit, though more extensive than that from the pass, is not so beautiful. There is a complete want of foreground, and the Weisshorn is not nearly so well seen; the only acquisition is the Fletschorn group and a glimpse of Italy, but these look equally well either from the Ried Pass or from points in the descent from the Balfrin Joch.

In coming down from the summit to the Ried Pass we took a different line from that followed by Mr. Watson, going diagonally over the rock-face to the glacier instead of following the south-east *arête*. The col was reached in one hour from the summit, and Saas in three hours more of actual walking.

I am told by Alexander Burgener that in the year 1879 he made a further exploration of this district in company, I believe, with a German gentleman. Starting from Randa they slept high up in a lateral valley, probably the one above Breitenmatt. The following day they crossed the Nadelgrat by a snow col south-east of the Galenhorn, and thus reached the snow-field of the Gassenried glacier above the upper ice-fall. I was unable to get any accurate information about this part of their route, but it will probably be found very useful by travellers crossing the Ried Pass.

On August 9, 1880, I crossed the Adler Pass to Saas with a caravan of nineteen persons, intending to return by the col north of the Balfrinhorn, from which our previous ascent of the peak had been made. Accordingly, on the following day we started—a party of four—Mr. A. Caddick and myself—with the guides Aloys Burgener and Basil Andermatten. We were under weigh by 3 o'clock. Our route lay down the valley to the church of Saas unter dem Berg, the second below the village. Here we crossed the stream and turned at once up the slopes on the west side, reaching some chalets called Alpje in an hour and a-half from the hôtel. We ascended by zigzags and *débris* slopes for an hour and three-quarters more to the foot of the wall of rock by which we hoped to reach the Balenfirn. The point where we took to the rocks was at the bottom of a rib which divides two gullies, the whole lying north of a well-marked rocky ridge which descends to the valley north of the Bider glacier, and is conspicuous from below. We breakfasted at this point about 3,600 feet above Saas. The wall of rock is 1,150 feet in height, and took us two hours to ascend. The lower part consists of rotten rocks, but higher up they are firm and good. The views from every step were magnificent, the Oberland and Fletschhorn groups being visible throughout. We built a stone man at the top of the rocks, and found that it was visible both from Saas and Visp; from the latter place it is seen against the sky-line.* We had now to ascend a short snow-slope to get on to the ridge which descends north-eastwards from the point 3,676 *mètres* (Federal map). This ridge we followed for some minutes, surrounded by the most glorious views. When the slopes on the right became less steep we glissaded down to the firn. We crossed it in half-an-hour, descending some five hundred feet to the foot of the snow-slope, which I had looked down upon two years before from the

* It appears to have been swept away by the winter snow.

top of the col. We ascended by the easy rocks east of it, and reached the rocky tooth between the two saddles of the Balenfirnjoch in a quarter of an hour from the foot of the slope.

Here the Weisshorn and Nadelgrat started up in a moment, as it were, before our eyes, and I was content to sit and watch them whilst Caddick climbed to the summit of the Balenfirnhorn by the ridge I had previously followed. The aneroid showed that the top of the col was 500 feet below the peak. This gives 11,974 feet as its height.*

We descended to St. Niklaus by the route which I had previously followed, only making the mistake of bearing too much to the right in going down the first rocks. We looked at the snow col to the left of the Galenhorn; but time was drawing on, and not knowing then that it had been crossed we did not care to venture over unknown ground with the chance of being benighted.

The views from every part of this route are far finer than those from the Ried Pass, as there is no Balfrinhorn in the way to block out the mountains to the north. The richly-wooded Vispthal, which lies directly in front, forms a most delightful foreground. Future travellers, I believe, would do well to take the pass in the opposite direction. They should ascend from Randa over Burgener's Galenjoch, thereby avoiding all *débris* slopes; they should cross the glacier, and go up the rocks to the Balenfirnjoch, and then descend to the Balenfirn. They should strike the snow-ridge south of the point 3,676, descend the rocks as soon as possible to the Bider glacier, and cross it above the ice-fall, completing the descent by its right bank, and then through the woods to Saas. For variety and beauty without extraordinary difficulty I can imagine no expedition more attractive than this would be.

On August 10, 1881, Messrs. Parker, Pocock, Vint, and I, (without guides), crossed the Balenfirnjoch once more by a different route. We had slept the previous night in a hay-hut on the Schweiben Alp, some two and a-half hours above Stalden, overlooking the Saas valley,—a hut much to be remembered for its many fleas. We started at 3.45 A.M., and followed the valley track, reaching the foot of the glacier in one hour. We took to the ice for a few minutes, and then turned off on to the huge *débris* slope on our left, ascending by which we surmounted the first great ice-fall. We kept up the glacier's right side, cutting steps up slopes which ought to have been snow, but which were blue ice, for nearly two hours

* 'Alpine Journal,' vol. x. p. 97.

by the side of rocks. Very steep slopes, mostly of ice and very hard, kept us step-cutting for the greater part of two and a-half hours more, and then at last we found ourselves on the flat snow-field of the Balenfirn, which I had previously reached from Saas. We followed the old route up the rocks to the col, but in descending on to the Ried Glacier we kept much more to the left, and so got off the loose rocks on to a tongue of snow, where one could glissade, in twenty minutes from the col. St. Niklaus was reached without further adventure, but the *débris* slopes below the glacier were nastier than ever.

In conclusion I shall only be following a precedent regularly set by the admirers of particular localities in expressing the hope that more attention may be bestowed by climbers upon this district in the future than has fallen to it in the past. A day of fame has, however, not been wanting to the Balfrin, as the following extract (and many others might be made from old books) will show:—

‘Les amateurs de beaux points de vue vont sur le pont de ce bourg (Viège) pour jouir d’une magnifique perspective. De là, en effet, on voit, vers le fond du tableau, les sommités neigeées du Mont-Rose (!), s’élever orgueilleusement au-dessus d’autres montagnes dont la couleur foncée fait avec la leur un contraste agréable. C’est surtout au moment du coucher du soleil lorsqu’il est coloré du rose le plus tendre, qu’il faut venir contempler ce superbe rival du Mont-Blanc.’ *

NEW EXPEDITIONS.

The expeditions recorded in the following pages are believed to fall under the definition given in an early number of this Journal; that is to say, not to have been previously accomplished by English mountaineers, or noticed in this Journal. In the cases where foreign climbers had preceded the writers, reference has, as far as possible, been made to the original accounts.

Dauphiné District.

COL FROM THE GLACIER NOIR TO THE GLACIER BLANC (3,670 mètres = 11,941 feet). *June 18.*—Dr. Paul Güssfeldt, with Alexander Burgener, starting from a bivouac (about 9,000 feet) above the Glacier Noir, mounted a rock wall, then traversed a snow basin above which two couloirs run up to the ridge between the Ecrins and the Crête de

* M. Viridet, ‘Viège, S. Nicolas, et Saas’; Genève, 1835. 12mo. p. 25.

l'Eucula (or Grande Sagne). Climbing up the western of these (the eastern being an easily recognisable snow gully) and then by the rocks between them, they encountered great difficulties before gaining the snow-covered rocks just below the *brèche*, and in this way they gained the snowy ridge visible from the Glacier Noir, just where the crest coming down from the Ecrins rises in several summits. They then ascended the Ecrins, traversing the whole of the E. arête. The amount of snow still on the mountains made the expedition unusually difficult.

This ridge had been already crossed in 1877 at its lowest point,* and Dr. Güssfeldt's new passage seems to lie to the S.W. of a bold rocky summit, on the N.E. side of which is the older pass.

AIGUILLE DU PLAT (3,602 mètres = 11,718 feet). July 10.—Mons. Henri Duhamel with the two Gaspards ascended from Les Etages to the E. ridge near the point 3,320 mètres, and reached the top, in 3½ hrs. more by steep and somewhat dangerous rock gullies on the E. face.

COL DES AIGUILLES (c. 9,700 feet). AIGUILLE ROUSSE (c. 10,000 feet). July 6.—Mr. Coolidge, with Christian Almer and his son Christian, starting from Le Désert en Val Jouvrey, followed the path up the valley for 2.15, till opposite the entrance to the Petit Vallon. Then mounting, by very steep grassy and rocky slopes, they gained the edge of the upper basin of the valley (whence the shepherd's hut was seen far below to the right, the track making a great *détour* in order to gain it) in 1.20. In 45 min., over moraine and *débris*, they reached the snow slopes at the head of the valley, and in 35 min. the base of a snowy couloir leading up towards the col, which is at the extreme south-eastern corner of the valley. Two short snow slopes, separated by some smooth and slippery rocks, gave access to the col in 35 min. (5½ hrs. from Le Désert, leisurely walking). In 20 min. from the col a rocky double-pointed summit to the south was climbed without any difficulty, and named *Aiguille Rousse*, as the correct spelling of the name of the glacier to the east is 'Entre Pierres Rousses' (not 'Entrepierroux'), and there is already an Aiguille d'Entrepierroux some way to the north of the col. Returning to the col in 15 min., the party descended by the easy snow slopes of the Glacier d'Entrepierroux, through very grand scenery, and quitted the ice in half an hour, the châteaux of La Lavey being gained in 40 min. more. This pass, though very circuitous when taken as a route from Le Désert to S. Christophe, may be useful to those climbers who wish to make expeditions from La Lavey. The only previous passage is that of Mons. E. Boileau de Castelnau on September 2, 1876, made in the same direction.†

LE FIFRE (3,730 mètres = 12,238 feet). July 10.—The same party made the first ascent of this bold pinnacle. Starting from La Bérarde, they gained by the usual route, in 4.50, a point within a few steps of the Col des Avalanches to the south of the Ecrins. In 25 min., by means of very rotten rocks, they gained the south slope of the western ridge of this peak. The ascent was made thence mainly by the crest of this western ridge, occasionally taking to the north face, the rocks

* *Alpine Journal*, vol. viii. p. 333.

† *Annuaire de la Société des Touristes du Dauphiné*, ii. 127.

being rotten, except near the top, where they were exceedingly steep. The double-pointed summit was gained in 1.55 from the Col des Avalanches, after a difficult climb. The great feature of the view is the splendid south face of the Ecrins. The return to the point where the west ridge had first been reached was effected in an hour, and thence an easy direct descent was made in half an hour to the snow at the west foot, some little way below the Col des Avalanches.

POINTE DU SELÉ (3,445 mètres=11,295 feet). *July 14.*—The same party made the first ascent of this peak, which is very conspicuously seen from the Combe de Celce Nière to the east. Starting from the Col du Selé, they climbed up a very steep little snow couloir on the south-eastern flank of the peak, and thence gained the summit without difficulty by traversing the eastern face, and climbing along the main ridge (1.10 from the col). The view was very fine, and the point should be climbed by any one crossing the col. La Bérarde and Soureillan were clearly distinguished. The descent by the same route occupied 45 min., the couloir requiring some little care.

PELVOUX FROM THE WEST (3,954 mètres=12,973 feet). *July 15.*—The same party effected a new and easy route up the Pelvoux. Starting from the Refuge Puiseux (or Soureillan), they gained, in 1.20, the Refuge de Provence, and in 1.15 more the edge of the Glacier du Pic Sans Nom (3,915 mètres) by the route usually taken in ascending this last peak. In 20 min. over snow they reached the foot of a broad snow couloir or wall on the west flank of the Pelvoux. The ascent of this (hardly a step having to be cut owing to the perfect condition of the snow) took 1.25, some easy rocks to the left being climbed towards the top for the sake of convenience. A point was thus gained in the rim of the final plateau of the Pelvoux, whence 15 min. over easy snow slopes sufficed to gain the highest point of the mountain. The ascent had only taken 3.20 from the Refuge de Provence, whereas by the ordinary route the same party (with the addition of Mr. F. Gardiner) had taken 3.05 in 1880. The great advantages of the new route are that it lies almost entirely over snow, and that it is wholly free from difficulties save the short crossing of the Glacier de Clot de l'Homme (which this year was very easy). On the descent the base of the couloir was reached in 50 min. from the summit of the peak, and the Refuge de Provence in 35 min. more, or 1.25 *from the summit of the Pelvoux*, the walking throughout the day not having been particularly fast.

MONT AIGUILLE (2,097 mètres = 6,880 feet). *August 29.*—Mr. Coolidge, with Emmanuel Ferrat *fils* as guide, starting from the Clelles station, on the line between Gap and Grenoble, reached the west base of the peak in 2.45, passing the hamlet of La Richardière, and in an hour more gained the undulating meadow which forms the summit. The final climb is up very steep rocks, and is not altogether easy, despite the numerous cables placed there by the French Club. The descent to the base took 1.05, and 1.55 more led to Clelles. A full account of this extraordinary peak, with full details as to the first ascent on June 26, 1492, will shortly be given in these pages.

TÊTE DE L'OBIOU (2,793 mètres = 9,164 feet). *August 31.*—Mr.

Coolidge, with Jean Isnard of Les Payas as guide, started from that village (7 kilomètres from Corps), and by a path mainly through woods, then over pastures, gained in about $2\frac{1}{4}$ hrs. the Cabane du Vallon at the eastern base of the peak; a fair zigzag path, traced by the Department of Woods and Forests, led, in 1.30, over *débris* slopes to the col between the Grand and Petit Obiou. Thence, skirting the base of the peak to the south face, the ascent was completed by a little gully of rock, not difficult but hard to find, the summit—a vast stone-strewn plateau—being gained in 1.10 (4.55 in all). It is the highest peak of the Dévoluy, and the view is strikingly desolate. The ascent is very rarely made by travellers, the only English ascent being that by Mr. Thornton Marshall, in August 1879.* The descent by the same route, including a *détour* to visit a curious lake in the rocks at the north foot of the Petit Obiou, took $2\frac{1}{4}$ hrs.

Cottian District.

PIC SIGNALÉ, or PIC DU VALLON DES HOUERTS (3,230 mètres=10,598 feet). *July 18.*—The same party effected the first ascent of this peak, on the lower slopes of which M. Salvador de Quatrefages met with his unfortunate accident last year. Starting from Escreins (a little village $2\frac{3}{4}$ hrs. from Guillestre), they mounted, in 1.20, by a pretty path through forests to the junction of the torrents from the Vallon des Salettes and de la Font Sancte (marked 2,053 mètres in the large French map). Thence, bearing to the right up a huge grass-grown moraine, they passed a hut in half an hour, and in 15 min. more gained the level of the torrent in the Vallon des Salettes (which is, properly speaking, the Vallon des Houerts), at the north foot of the peak. In order to gain the great snowfield above which the peak rises, the party mounted over slopes of stones, and thence, by a steepish couloir, to the (proper) right of the great central one, which offered some awkward steps. The snow plain was gained in 1.35 from the level of the valley. Crossing it towards the north-east ridge of the peak, the party climbed up rotten rocks on the north face, and gained a notch between the two highest pinnacles, both of which were climbed (1.20 from the point at which the snow was reached, or 5 hrs. leisurely walking from Escreins). The east peak is slightly the highest. The view was especially interesting towards the south. The descent to the snow was effected in 50 min., the party keeping more along the north face of the east ridge, and at the summit of a couloir, far below the top of the peak, finding a cairn, probably built in August 1878 by Signor Enrico Novarese, to mark the extreme point attained on an attempt on the peak. To vary the return, the party traversed the snow plain far to the west, and gained the level of the valley in 1.20 by fatiguing slopes of stones. Escreins was reached in 1.30 morn.—3.40 from the summit of the peak. The name Pic du Vallon des Houerts is the name by which it is known at Escreins, and is infinitely to be preferred to the commonplace Pic Signalé of the map.

POINTE DES HENVIERES (3,273 mètres = 10,739 feet). *July 19.*—The same party made the first ascent of this peak (the second in height

* *Annuaire de la S. T. D.*, v. 147-150.

of the Escreins group), which had been previously attempted by several foreign climbers. Retracing their steps in an hour to the junction of the two torrents mentioned above, they kept along the left bank of the Vallon de la Font Sancte by a faint track, crossed it in 25 min. where the valley opens out, and by steep grassy and stony slopes gained in 50 min. the entrance of a lateral valley to the south-west of the peak. Mounting this by endless slopes of stones and shifting *débris* they reached in 1.20 the snow band at the base of the peak which runs up on the right to the southern ridge. Descending slightly, they gained by a convenient rock gully a point on the north-west arête, some way above the lowest point in the ridge between the Henvières and the Pointe de la Saume. Ascending easily along this ridge to the base of a conspicuous pinnacle (which from below seems to be the highest point), they managed with considerable difficulty to turn it, and to descend into a couloir on the west face, whence the true summit (the north point of a longish ridge) was gained by easy rocks (1.30 from the snow band). The view was very similar in character to that of the day before. Traversing the ridge to the south peak of the ridge, the party then discovered a curious gully, utterly invisible from any other point, which led them by shifting *débris* and stones to the top of the snow band already mentioned (whence it would be probably feasible to gain Ceillac by the Lac de Sainte Anne), and so to the base of the peak in 20 min. from the summit, every difficulty having been thus avoided. Escreins was regained by the morning's route in 2.05 min. Total—up, 5.05; down, 2.25. The local spelling of the name is 'Enveyrea.'

PANESTREL (3,253 mètres = 10,673 feet). COL DE PANESTREL (c. 10,200 feet). July 21.—The same party, starting from Escreins, reached the hut in the Vallon des Salettes, or des Houerts, in 1.35 by the route described above. Continuing to mount the valley for some way, they then struck to the left over the rocky shoulder of the peak marked 3,042 mètres, and, traversing another slope, reached the Col des Houerts (1.30). Descending slightly, they bore to the left (the descent from the Col des Houerts lying to the right) through an upland glen, and gained, in little over an hour from the Col des Houerts, a point at the south base of the peak, at the head of a great rocky gully at the south-west corner of the Vallon Claus—this was named *Col de Panestrel*. Hence the first ascent of the peak was effected in 25 min., without the slightest difficulty, along the edge of the cliffs overhanging the Vallon Claus. The view, specially to the south, was extremely fine and extensive, including Mont Dauphin, Escreins, and the three villages composing the commune of Maurin. Returning to the col in 10 min., the party then commenced the descent of the great gully, keeping at first slightly to the left, and then along a rocky ridge which divides it into two branches. The rocks were fairly steep, but good. The base was reached in 50 min., half an hour more led to the highest pass in the Vallon Claus, and 1.05 more to the hamlet of Maljasset, whence the huge cairn built on the peak is very conspicuous.

TÊTE DU PELVAT (3,218 mètres = 10,558 feet). July 23.—The same party effected the first ascent of this peak. Starting from Maljasset

they followed the path of the Col de Lautaret, or de Chabrière for 2.45 to the entrance of a little glen to the south-east of the peak, between it and a point marked 3,160 mètres on the map. Mounting this glen over stones, and stopping to examine the peak, they gained its eastern base in 40 min., and the foot of the central couloir in half an hour more. Taking to the rocks to the (proper) left of the couloir, which were found unexpectedly good, then to the couloir itself, the summit was gained by the east ridge in 40 min. from the base (4.35 from Maljasset). The view was magnificent in the extreme, extending from Mont Blanc and Monte Rosa to the Viso and the chief summits of the Maritime Alps. The descent by the same route to the base occupied 25 min., the Lautaret path rejoined in 45 min., and the col itself reached in 50 min. more. The descent to Castel Delfino took 4.05, lying over fine pasturages and through the picturesque valley of Bellino.

On July 25 the same party crossed over to Crissolo by the *Colle di San Chiaffredo* (5 hrs. up, 4 hrs. down), a stony and tedious pass, redeemed only by the stupendous views of the Viso on the way down into the Po valley.

MONTE VISO FROM THE NORTH-EAST (3,843 mètres = 12,609 feet—new edition of the Government map of Italy). July 28.—The same party effected a new route up the Viso by the face so conspicuous from near Crissolo. Starting from the Albergo Alpino on the Piano del Re (2 hrs. above Crissolo), they reached in 2.05, over grass slopes and stones, the foot of the great snow couloir running up to the ridge between the Viso and the Visolotto. Ascending by this couloir (which would be very dangerous later in the day, as it is swept by falls from the glacier to be mentioned presently) close to the rocks on its (proper) right side, until a little above the point at which the rocks of the *Sedie Cadreghe* divide it into two branches, they then took to the rocks to the left, climbed up a rocky gully, and turning, by means of the main eastern face of the Viso, a pinnacle near the little glacier seen in all views from this side, reached this glacier in 2½ hrs. from the base of the couloir. The party by striking to the right might in a few minutes have gained Mons. Guillemin's Col du Viso, between the Viso and the *Sedie Cadreghe*, which is attained when ascending the Viso from the Vallante valley.* Wishing, however, to ascend the Viso from the north-east (and not from the north-west), they mounted the glacier for a few steps, and then took to the rocks of the east face, which were at first excellent, but gradually became steeper and steeper. The great couloir which descends from near the summit of the Viso to the little glacier being composed of hard ice, the object now was to gain a point on its (proper) right bank at which it is cut horizontally into two parts by a sharp snow ridge. The party were gradually driven more and more to the right, and finally ascended close to the rocks on the right bank of the couloir, gaining the point at which it is divided in 3 hrs. from the little glacier. The ice in the upper part of the couloir was as hard as below, though not quite as steep. The ascent was continued as before close to the rocks of the right bank, and

* *Alpine Journal*, vol. ix. p. 353.

when a great height had been attained, by a gully in the rocks to the left which led directly towards the summit. This proved the worst part of the day's work, as the rocks were very rotten, and were nearly everywhere coated with a glazing of ice (perhaps due to the storms of July 26). The ascent was exceedingly difficult, not to say dangerous. Finally striking still more to the left, the rocks suddenly became better, and gave access in a few minutes to the highest summit of the Viso, which was thus reached direct from the east (9.50 walking from the Piano del Re). The view was very fair, and the spectacle of the shadow of the peak creeping over the Italian plain very striking. The descent was effected by the ordinary route to the Vallon delle Forcioline, and the party regained the east base of the Viso by the Passo delle Sagnette and the Colle di Costagrande. Several previous attempts had been made to ascend the Viso from this side, but none of them by the route just described, which lies from beginning to end over hitherto entirely untrodden ground. The routes from the north-east and north-west are as distinct as the two main routes up the Matterhorn, though in both cases, by a longer or shorter traverse, it is possible to pass from one to another.

The Viso has now been ascended by each of its three faces. The north-east (or Crissolo) route is much the longest and most difficult, though the difficulties will be diminished if the upper couloir is found to be filled with snow instead of ice. The north-west (or Vallante) route is best adapted for those climbers approaching the Viso from France, and offers comparatively slight obstacles. The south (or Forciolline) route is that usually taken, and, except in bad weather, can alarm none save novices in climbing, though the rocks are more rotten than on either of the other faces.

VISOLOTTO (N. peak, 8,353 mètres=11,001 feet, S. peak, 3,346 mètres=10,978 feet;—new Italian Survey). *July 31.*—The same party made the first ascent of the highest and central peaks, and the second of the south peak of this mountain. Starting from the Piano del Re, they gained the snow band which runs along the eastern base of the peak in 2½ hrs. Ascending the easy broken rocks of the east face until near a conspicuous yellow pinnacle, not very far from the south-east ridge, they then bore to the right and climbed straight up a very steep rock-wall (the rocks affording excellent hold), by which they reached the central and lowest peak in 1.50 from the snow band (4.05 from the Albergo Alpino). Fifteen minutes' scramble to the right along the shattered ridge brought them to the north peak, which is decidedly higher than the south peak, though not by much.* As it is not known to have been ascended previously, and as no traces of man were found on the top, a huge cairn was built to perpetuate the claim of the above party to have made the first ascent of the highest peak of the Visolotto. Returning in 10 min. to the central peak, the party climbed along the ridge, effected an extremely steep (though

* This estimate is confirmed by the figures given in the new Italian map (sheet No. 67), for an early copy of which I have to thank Signor G. B. Rimini, the Secretary of the Florentine Section of the C. A. I.—W. A. B. C.

not really difficult: descent to the gap at the north foot of the south peak, which was gained by an easy climb of a few minutes in 25 min. from the central peak. Here were found the two cairns, the flagstaff, and a packet of miscellaneous objects left on September 4, 1875, by Signor P. Mantalio, who reached this peak from the Piano del Re by the south-east ridge (encountering great difficulties owing to iced rocks), but who, according to his own account,* did not go on to the north end of the highest ridge, which runs from N.W. to S.E.

The great feature of the view is the splendid mass of the Viso, the two northern routes being traceable during nearly the whole of their course.

After leaving an Italian flag on the south peak the party regained the gap at its north foot, and descended by a rocky couloir in the west face. This was fairly easy for some time, though the party were gradually forced to the right into a couloir descending directly from the north peak; but the last 100 feet were nearly sheer, and it was only after considerable search that, by an excessively difficult traverse to the left, the party were enabled to descend on to the snow, not far from M. Guillemin's Col du Siège Carré, between the Visolotto and the Sedie Cadreghe (2.15 from the south peak). Descending slightly towards the Vallon de Vaillante, skirting the rocks of the Visolotto, and then ascending over stones and snow, the party gained in 50 min. the col between the Visolotto and the Viso di Vaillante (this latter peak is called Punta Gastaldi on the new Italian map), locally known as Col du Viso, but called by M. Guillemin the Col du Visolotto. An hour sufficed to descend the snow couloir on the east, and 45 min. more to reach the Piano del Re (4.40 from the south peak of the Visolotto by a very circuitous route).

BRIC BOUCHET (3,003 mètres = 9,853 feet). *August 3.*—The same party, starting from Abriès, reached the village of Val Preveyre in 1.30, and, proceeding along the north slopes of that pretty pasture valley, gained the base of the peak in 1.35 more. A rough walk up stones led, in 35 min., to a gap on the north ridge, known as La Passette, whence 15 min. across the west face over excellent rocks sufficed to reach the summit (3.55 from Abriès). Clouds hid the view towards Italy; in the other direction Aiguilles and Château Queyras were seen, and the artillery practice at Briançon thoroughly appreciated. Descending for a few minutes along the south ridge, till near the second peak, the party slid down some whitish rocks (very conspicuously seen from below to the left of the second peak), and then effected a *direct* descent down the west face, the rocks being most excellent, reaching the base in 1.15, leisurely going from the highest peak. 2.20 more brought them back to Abriès. The first ascent is said to have been made by a hunter, who perished in the descent.† The first ascent by travellers was made on July 23, 1876, by way of the south ridge, by Signori C. Fiorio, C. Ratti, and C. Rossi, without guides.‡ The second ascent was made by the same route on August 23,

* *Bollettino del Club Alpino Italiano*, 1876, p. 186.

† *Annuaire du C. A. F.*, vol. iii. p. 264.

‡ *Bollettino del C. A. I.*, 1877, p. 215.

1876, by Signori E. Rossi and E. Novarese with a shepherd as guide.* On the third ascent, September 5, 1876, M. Paul Guillemin, with two Abriès men, mounted by La Passette and the north arête,† as did also, on August 18, 1879, Signori C. Ratti, A. and C. Fiorio, and F. Paganone, whose cards were found on the summit. The ascent described above is believed to be the fifth, and the avoidance of the north ridge on the way up, and the direct west descent, are presumed to be new. The peak, though not the highest in its district, makes by far the most show when seen from neighbouring ranges.

ROCHEBRUNE (3,324 mètres = 10,907 feet). August 5.—The same party effected the ascent of this peak—the highest in the Cottian Alps north of the Viso. Starting from the little hospice on the Col d'Izouard (8½ hrs. from Château Queyras), they gained the Petit Col Perdu in 25 min., then descending some way traversed the Casse des Oules, an extensive tract covered with stones fallen from above, and gained the ridge at the south-west foot of the peak in 1.50. A gully filled with loose stones led to the gap between the two peaks, and a short scramble up steepish rocks to the left sufficed to gain the wooden cross on the summit (1.05 from the south-west base, or 8¼ hrs. from the hospice). The view was interesting, but had no special feature, the Viso being in clouds: it included the village of Laus and Monestier. The return to the hospice by the same route took 2½ hrs. The route taken was perfectly easy, but very stony and fatiguing. The peak has been ascended from every side: there are some snow slopes on the Col de Péas side, which would serve to facilitate the ascent from the east. The Rochebrune, though it must attract the attention of every one who has crossed the Col du Lautaret to Briançon, does not seem to have been hitherto ascended by English climbers.

TURGE DE LA SUFFIE (3,026 mètres = 9,928 feet). ESCAVINADE (3,100 mètres = 10,171 feet). September 12.—Mr. J. Nérot with A. V. Favre (*gardien* of the Refuge Izouard), starting from the Refuge, crossed the Petit Col Perdu and followed the Rochebrune route as far as the Casse des Oules. They then mounted the Gorge de la Muratière and easily gained the summit of the Turge, whence in an hour they reached the Escavinade, by way of the arête between the two peaks, of both of which this was the first ascent.

FARNAREITA (3,184 mètres = 10,283 feet). September 19.—Mr. J. Nérot with Marroud (the *gardien* of the Refuge Agnel) made the first ascent of this peak by keeping from the Col La Noire round on the Maurin side, while from S. Véran it presents a formidable aspect.

PIC ROUCHON (3,016 mètres = 9,895 feet). September 20.—Mr. J. Nérot, with Marroud and Antoine Jouve of Le Raux, made the first ascent of this peak. Starting from S. Véran (the highest village in Europe, 6,592 feet), they reached the base in 3½ hours, and, after encountering serious difficulties on the S. face, the summit in 1½ more. The view is limited by the neighbouring ranges. The descent to the

* *Bollettino del C. A. I.*, 1877, p. 236; *Annuaire du C. A. F.*, vol. iii, pp. 266, 267.

† *Annuaire du C. A. F.*, vol. iii, pp. 264-269.

base took $\frac{3}{4}$ hour, and in $\frac{1}{2}$ hour more the Arête du Rouchon was reached, the view thence being very fine, especially towards the Viso. The return to S. Véran was made by the Col Blanchet, near which a fine rock pinnacle (130 feet high) was climbed with difficulty.

Gruian District.

COUPÉ DE MONEI, OR COLLE DEL GRAN SAN PIETRO* (circa 10,600 feet). August 1.—Messrs. G. P. Baker and G. Yeld, with Ulrich Almer and Johann Jossi, of Grindelwald, made the passage of this col, which would appear not to have been crossed before, from the Valnontey to the Valeiglie. Having walked up the Valnontey beyond the proper place for turning off for the châteaux of Monei, they climbed straight up the rocks, and, after traversing a little to the right, found themselves above the châteaux. They then turned to the left up an old moraine, and afterwards crossing (towards the Rossa Viva) over another moraine, struck the Glacier de Monei, at a height of about 9,000 feet. The glacier gave some trouble, as it was impossible, owing to the numerous crevasses, to take a straight course. The slope immediately under the col was quite easy. The col, a conspicuous gap in the rock, is between the Pène Blanche of the Alpine Club map and the northernmost spur of the Tour St. Pierre massif. The descent from the actual col, though doubtless practicable, was rendered dangerous by a heavy mass of overhanging snow. The party therefore turned to the rocks on the north of the col, and, having gone down a short way on the Valeiglie side, got into a snow couloir in excellent order. The descent was quite easy. Approximate times: Cogne to the col about 6 hrs., from the col to Cogne about 4 hrs.

GRANDE SERRE, of the new Italian survey. PUNTA DELL' ERBETET, of Sig. Baretti† (who estimates the height at 3,800 mètres = 12,476 ft.). POINTE DE L'HERBETET, of the Alpine Club map, and the Abbé Gorret's handbook‡ (estimated height 12,391 feet). August 3.—The same party left a châtlet on the route of the Col de l'Herbetet, about 3 hrs. 20 min. above Cogne, at 4.4 A.M., and, following the hunting-path till the glacier under the Col de l'Herbetet was reached, gained the eastern arête of the mountain at 6.15. After a halt of 40 min. they began to climb up the ridge, which they followed for the most part to the summit. On the lowest part of this ridge the rocks were very rotten; higher up, though loose, they gave good hold; then they became rotten for some distance, and then again for the final climb gave good hold. The ascent was difficult, though the mountain was in first-rate order, and was made almost entirely on rock, only one or two small patches of ice and snow being met with. The summit was reached at 10.48,

* Sig. Baretti, *Per Rupi e Ghiacci*, p. 59.

† *Per Rupi e Ghiacci*, p. 64.

‡ The above mentioned Handbook puts the height tentatively at 4,000 mètres = 13,123 feet. This is certainly too high, but the mountain appears to be considerably higher than the Grande Serre of the Alpine Club Map (climbed by Mr. Yeld's party in 1879—*Alpine Journal*, vol. ix. p. 362), which the new Italian Survey, under the name L'Erbetet, makes 3,778 mètres (= 12,391 feet).

i.e. in about $3\frac{1}{2}$ hrs. steady, though not fast, climbing from the break-fast place; the descent for the same distance took $4\frac{1}{2}$ hrs. The only previous ascent was made by Sig. L. Barale (whose card was found in the cairn), on August 22, 1873, by the (northern) ridge which runs down to the Col de l'Herbetet.*

GRIVOLA FROM THE COL DE MESONCLES (3,969 mètres=13,019 feet, new survey). August 6.—The same party having slept by the side of a rock below the eastern side of the Col de Mesoncles started at 3.15 A.M. and went up the rocks a little to the left of the actual col. When they reached the ridge which runs down from the Grivola to the col they kept along it. At 8.25, after crossing difficult rocks, 750 feet of which took 2 hrs., they came to the foot of a chimney in the shoulder so conspicuous in the view of the Grivola from the Cogne path above Pont d'Ael, and in Professor Bonney's panorama of the Cogne Graians from Mont Emilius. This chimney, the height of which, by aneroid, was 200 feet, took 1 hr. 10 min. to climb. Soon after leaving the chimney they halted at the head of a vast chasm on the Val Savaranche side, where water was found. Thence to the top the route lay over monotonous rocks, alternating with ice and snow slopes. The actual summit was reached at 12.8 P.M. They descended by the usual route to Cogne.†

POINTE DE GAI (3,650 mètres=11,972 feet, new survey). August 9.—The same party left Cogne at 1.45 A.M. and reached the Col de Grancrou at 8.45, having halted about 45 min. on the way. It may be useful to note that they saved much time by avoiding the séracs which a party crossing the pass on the previous day had found very troublesome. The ascent was made by a conspicuous mass of rock on the left (in ascending), and then by crossing to other rocks on the right; by this course the séracs were avoided. The final slope of snow was also avoided and the summit of the pass reached by the rocks on the right, which were not difficult; on these rocks the route of the previous party was followed. Leaving the knapsacks on the western side of the col, they ascended the Pointe de Gai in 2 hrs. 15 min. The ascent—after leaving the snow ridge of the col was made entirely by the rocks, except on the little crown of snow which forms the actual summit. Some of these rocks were decidedly difficult. The return to the col was effected by descending the Glacier de Gai for some distance and then traversing easy rocks to the col, by probably the same route as was followed in the first and apparently only previous ascent, on June 14, 1875, by SS. Vaccarone and Palestrino.‡ The col was reached in 1 hr. 15 min.

PUNTA FOURA (3,410 mètres=11,186 feet, new survey). August 12.—The same party left the stabilimento of Ceresole at 1.30 A.M., and having walked up the Val d'Orco nearly to Ciapini, turned up to the right to the Glacier de Gias de Beu, by the route indicated on the Alpine

* *Bollettino del C. A. I.*, 1874, pp. 284-6.

† This route is quite distinct from that taken by Messrs. Pendlebury in 1876 (*Alpine Journal*, vol. viii. p. 101), which is more to the east.

‡ *Alpinista*, vol. ii. p. 104; *Guida Itinerario per le Valli dell' Orco, di Soana, e di Chiussella* by Vaccarone and Nigra, 91-2.

Club map. They then worked round the Punta Feura to the east, so as to gain a view of the glaciers under the Charforon and Monciair. They afterwards cut steps up snow and ice slopes to the northern rock ridge of the mountain, and by it ascended to the top, which was reached at 10.0. This time much exceeds what is really necessary for the ascent. The ridge afforded good and interesting climbing, though the journey to the foot of it was somewhat monotonous. The actual summit has beneath it a great window in the rock, which from a distance gives it a very curious appearance, hence the name Punta Forata, or Foura. The view is fine. The only previous ascent seems to have been that of Sig. Baretti in 1867, which was made from the west.

LEVANNA ORIENTALE (3,554 mètres = 11,660 feet, new survey; 3,570 mètres = 11,709 feet, Guida delle Alpi Occidentali). August 15.—The same party left the stabilimento at 12.48 A.M., and, after losing some time in the forest, reached the eastern arête of the mountain at 6.35. They then mounted by snow slopes on the side of the Valle Grande for some time, and then again took to the arête, by which, leaving it only once for a few minutes, they reached the summit at 9.21. As much time was spent in looking for minerals, as well as in other halts, the time might probably be reduced by two hours if necessary. The view was magnificent, including part of the plain of Italy. Leaving the summit at 11.5, the party descended by the arête till the snow was reached; the descent was then continued (by the snow) on the Val Grande side as far as possible, after which they went down a small couloir on the Val d'Orco side, and afterwards took to the snow, crossing the glacier (well seen from the stabilimento) to the moraine. Walking slowly they reached the stabilimento at 4.10 P.M. This expedition can be most strongly recommended. The climb along the arête is interesting, and the views superb, and though on most of the previous ascents the climbers seem to have slept at the chalets under the moraine, can be easily taken from the stabilimento.*

COL DU CHARFORON (circa 10,850 feet by aneroid). August 18.—The same party effected a new pass between the Charforon and the Becca di Monciair. They left the stabilimento at 3.25 A.M., and having lost some time by descending too much in the direction of Noasca when at a considerable height above Val d'Orco, and spent 40 min. in a halt for breakfast, reached the small glacier in the hollow between the Charforon and Monciair at 8.50. There being very good water here, combined with a very fine view, a second breakfast was made. Leaving at 9.45, they crossed the glacier, making rather towards their left, and reached the rocks at 10.20. They took to the rocks to the left of the actual col and worked towards the right, meeting with but

* The first ascent was made September 25, 1874, from Ceresole, by Lord Wentworth. His route is believed to have been along the east arête. The second, by Signor Vaccarone on July 12, 1875, from the Col Girard along the south ridge. The third on August 4, 1875, by SS. P. Palestrino and C. Francesetti, mainly by the great couloir between the east Levanna and the Levannetta. It has also been ascended by S. Simonetti and other Italian climbers. See Signor Vaccarone's excellent article on the group in the *Bollettino del C. A. I.*, 1876, specially pp. 436-7.

one *mauvais pas*, a smooth wet slab. A good deal of fresh snow had fallen during the previous days, and the actual pass was reached (at 11.9) through a lovely snow cornice. The view was fine, the Viso and the plain of Italy being well seen. They left the col at 12.0, and descended in the teeth of a biting wind for 30 min. on steep ice and snow, then for 15 min. they took to the rocks on their right to turn a great *schrund*, and at 1.7 cleared the ice. They descended to Villeneuve the same evening.

ROSSA VIVA, West Peak (11,956 feet, Alpine Club map). *August 10.*—The same party (without Mr. Yeld) left a bivouac near the chalet of La Motta (about $4\frac{1}{2}$ hrs. above Noasca) at 2.45 A.M., and made the ascent of this fine peak. Though the climb was not difficult, they met with considerable danger from falling stones. Time from La Motta to the summit about 5 hrs. 30 min. They found there the little lake mentioned by Sig. Martelli, who made the first and apparently only previous ascent (from Cogné). The view was superb, the rivers in the plain of Italy being distinctly seen. They descended to Ceresole. This peak would seem to reach a greater height than 12,000 feet, as it is certainly higher than the Pointe de Gai, which the new survey makes 11,972 feet.

Mont Blanc District.

AIGUILLE VERTE FROM THE S.W. (4,127 mètres = 13,539 feet). *July 29.*—Mr. A. F. Mummery with Alexander Burgener, starting from the Montenvert at 11 P.M., crossed the last 'bergschrund' on the Glacier de la Charpoua at 7 next morning. Taking to the right hand (S.) of two rock gullies in the precipitous cliff which cuts off the great couloir from the glacier, they encountered great difficulties owing to ice on the rocks. Traversing to the great couloir they kept up it some way, and then effected a difficult crossing to the left hand of its two branches. This being filled with bare ice, the party were obliged to take to the rocks on the right, whence a short scramble brought them to the main arête. The summit was gained at 12.20 P.M., and the descent effected by the ordinary route.

AIGUILLE DES CHAMMOZ (3,442 mètres = 11,293 ft.). *August 3 and 5.*—The same party and B. Venetz made the first ascent of the two highest pinnacles of the highest ridge of this peak. Starting on August 3 from Chamonix at 2 A.M., they followed the Aiguille de Blaitière route up the Glacier des Nantillons, as far as the base of the couloir which runs up to the depression between the two main summits of the Chamoiz. Climbing up this couloir, they turned a great smooth slab on the N.W. arête, scrambled through a curious hole (well seen from the Mer de Glace) on to the Mer de Glace face, traversed it for a short distance, and regained the ridge. They were then forced on to the Nantillons face, but managed to reach the ridge again by a convenient crack, and attained the summit at 2.20 P.M. Not feeling sure, however, that this point was really the very highest tooth, the same party, starting on August 5 at 2 A.M. from the chalets of Blaitière dessous, retraced their route to the base of the first peak, and gained the desired point (to S.E. of the other), the last bit being des-

perately difficult to climb, at 11.20. The route taken was as far as possible along the ridge, though they were constantly forced on one face or the other, and had to descend into several deep clefts on the arête by means of a rope. The difference between the two pinnacles is very small.

Pennine Alps.

COL DE L'AURIER NOIRE (about 10,870 feet). *August 26.*—Messrs. A. Cust and J. B. Parish, with Jean Maitre of Evolena as guide, following a path which ascended immediately from the chalets of Prarayen, crossed a rocky brow on the right bank of the Combe de Brulé, and reached a bridge over the stream of that valley in 1 hr. 10 min. After traversing easy *débris* for 40 min. to the foot of the fine icefall of the considerable Glacier de Mont Brulé, they ascended by broken ground on the left bank in 1 hr. to the upper plateau of the glacier, a level circular basin nearly as large as that of Za-de-Zan, and bounded above by a line of rocks projecting from the ridge of Mont Brulé. In 1½ hr. they reached a Col lying west of these rocks, at the spot where a snow gap is rightly marked on the map, and approached by easy snow slopes on each side; the last part of the ascent, however, was made over rocks east of the snow. The descent to the Col de Collon occupied 1½ hr., owing to the frozen condition of the snow. The view is fine, and the Col forms an interesting and the most direct passage between Prarayen and Arolla. The above name proposed is derived from the name Aiguille de l'Aurier Noire, sometimes applied to Mont Brulé.

Monte Rosa District.

DENT D'HERENS DIRECT FROM THE STOCKJE (4,180 mètres=13,714 ft.). *August 1.*—Messrs. T. Jose and F. Hicks, with Ferdinand Imseug, starting from the Stockje hut, kept up the Stockje side of the Tiefenmatten glacier for an hour, and in 20 mins. crossed to the foot of the ridge which runs N.N.W. from the peak. This ridge is not clearly marked on the Federal map, but is well seen in Herr Imfeld's relief of the district; it is entirely distinct from the ridge running from the peak to the Tiefenmatten Joch. Crossing a 'bergschrand,' they took to the ridge and mounted rapidly for 2½ hrs. by one side or the other, a little care being required owing to rotten rocks. They were then obliged to circumvent a pinnacle on the ridge by keeping round it to the right, regaining the crest by a little rock couloir, and in 1.45 more reached the spot at which the routes from Prarayen and the Tiefenmatten Joch join, a quarter of an hour from the top, which was thus gained in 5.50 from the hut. The new route is short, interesting, and above all free from falling stones, but might be impracticable with much snow. The same route was again followed on August 15, by Mr. Gerald Fitzgerald, with J. A. Moser.*

* In connection with this peak it may be noted that Herr B. von Lendenfeld claims (*Oesterreichische Alpenzeitung*, 1881, p. 170) to have made on July 26, 1879, the ascent by the arête falling to the Tiefenmattenjoch, six weeks before Messrs. Baumann and Cullinan (*Alpine Journal*, vol. iv. p. 382).

WELLENKUPPE—N. PEAK OF GABELHORN (12,828 ft.). *August 13.*—Messrs. Parker, Scriven, and Conway made the second recorded ascent of this peak by a new route, with Franz and Adolph Andermatten. Leaving Zermatt at 2.30, they followed the ordinary Gabelhorn route for 3 hrs. to the point where the Gabelhorn glacier is usually entered on, above the great ice-fall. Here turning right, up rocks and a snow-slope, they reached in 40 mins. a col overlooking the Trift and Gabelhorn glaciers. Ascending the small snow-field, which lies on the buttress dividing these glaciers, to its head, they reached the foot of the N.E. rock-face in $\frac{1}{2}$ hr. They ascended the face bearing left, and passing between two conspicuous patches of snow till, in $\frac{1}{2}$ hr., they struck the S.E. arête, and in a few yards reached a *Gabel*, similar to that on the Rothorn. Here Mr. Parker stopped. Above this a very firm steep wall of smooth rock was climbed in $\frac{1}{2}$ hr., and led to a rock-plateau, on which there is a cap of snow, which forms the summit. After building a stone man, they cut steps in 10 mins. to the highest point. Descent: 25 mins. to Gabel, 50 mins. to top of snow-slope, 25 mins. to Gabelhorn route, 1 hr. to the valley pastures.

August 22.—Messrs. J. Heelis and Gerald Fitzgerald, with Joseph Moser of Täsch and Joseph Taugwalder of Zermatt, as guides, ascended the same peak by the arête leading from the Triftjoch to the summit. The party followed the route of the Triftjoch as far as the level upper névé of the Trift glacier, then bearing to the left they reached the foot of a couloir leading up to a depression in the ridge between the Trifthorn and the Wellenkuppe somewhat to the south of the Triftjoch itself. The couloir and depression are visible from the Riffel. They ascended the couloir to the depression in one hour. It was found to be extremely steep (though there was no ice in it), and the rocks difficult, though firm. As soon as the depression was reached they turned to the south along the arête by which the summit was gained in three hours more. The lower portion of the arête is very narrow and broken. Three towers or pinnacles of rock had to be crossed, and two more to be turned by taking for a short time to the western face of the ridge. The upper portion is not so narrow, and it finally merges in the snow summit of the mountain. The descent was effected by Mr. Conway's route described above.

The mountain was first ascended by Lord F. Douglas in 1865 by some unrecorded route,* the last part of which seems to have traversed the Trift arête.

BALENFIRN JOCH (c. 11,974 ft.). *August 10.*—Messrs. Parker, Pocock, Vint, and W. M. Conway, without guides, crossed this pass by a new route, which will be found fully described on pages 343-4.

It may here be noted that on July 2, Dr. P. Güssfeldt, with A. Burgener, succeeded in effecting the *descent* from the Col du Lion to Zermatt.† Great difficulties were encountered, and the night had to be spent on a rock in the middle of the couloir.

* See *Alpine Journal*, vol. ii. p. 222.

† Cf. *Alpine Journal*, vol. x. p. 96.

Bernese Oberland.

ASCENT OF THE ROCKS OF THE BLÜMISALP FROM THE TCHINGEL GLACIER (3,760 mètres = 12,041 feet). *August 21.*—Messrs. H. G. Gotch, G. H. Savage, and F. Taylor, without guides, climbed the rocks of the Blümisalp from the Tchingel glacier by a route different from that followed by the Messrs. Hartley in 1874 (*Alpine Journal*, vol. vii. p. 325). Crossing the glacier immediately above the ice-fall at its western end, they gained the strip of horizontal hanging glacier, which extends along the face of the mountain, by the lower rocks of the Freudenhorn, and having followed it eastward for three-quarters of an hour, took to the upper rocks, two and a-half hours after quitting the Tchingel glacier. The ascent of these to a gap a little east of the Blümlisalphorn took three hours' hard work, the last part of the climb presenting serious difficulties, though little ice was met with. As it was now 4 P.M. further ascent was abandoned, and after about an hour and a-quarter's search for a quicker descent on the north side, they found themselves obliged to return to the rocks, on which they were brought to a stand at 9 P.M., at a height of 10,250 feet. Starting again next morning at dawn (4.40) they reached the level of the Tchingel glacier soon after 8 A.M., and Kandersteg soon after noon. The expedition had been one of 31 hours, of which $21\frac{1}{2}$ were spent in active exertion. The party was roped for 25 hours continuously.

Rhaetian Alps.

STAMMERSPITZE (3,256 mètres = 10,683 ft.). *August 4.*—Mr. J. P. Farrar, with Alois Praxmarer of Feuchten (Kaunserthal), and Heinrich Prinz of Samnaun, starting from Samnaun, kept for an hour up the Maisesthal, then turned sharp to the right, and by slopes of 'Geröll' with patches of snow, gained in 1.30, below a prominent rocky tooth (S. of the point marked 2,918 mètres on the Federal map), the ridge running N. from the peak. Descending slightly on the Engadine side, they then bore to the left and crossed the N.W. face (composed of bad 'Geröll' at times resting on ice), gained and crossed the ridge running S.W. from the peak by means of a rather difficult rock couloir, and so gained the S. face, whence a very steep rock couloir led to the final ridge ($2\frac{1}{2}$ hrs. from the N. ridge). The point reached was the central peak of a ridge running E. and W.; the E. peak seemed somewhat higher, but the arête of weather-worn rocks appeared impracticable. On the descent, the entire S. face of the mountain was traversed. It consists of bad 'Geröll' resting at a high angle. In this way, the Maises Pass was reached in 4 hrs., including halts, from the summit. From that point the E. peak is probably practicable. The falling stones which, according to Tschudi,* abound on the mountain, were experienced on the N.W. face only. No previous ascent of this ridge seems to be known. Praxmarer led throughout. Total time, Samnaun and back, including all halts, $13\frac{1}{2}$ hrs.

* *Tourist in der Schweiz* (ed. 1880), p. 441.

Oetzthal District.

WEISSKUGEL FROM THE LANGTAUFERERTHAL (3,741 mètres = 12,274 feet). *August 30.*—Messrs. Julius Meurer (President of the Alpenclub 'Oesterreich'), J. C. Lautner, and F. J. Oesterreicher, with Gabriel and Joseph Spechtenhauser, starting from Hinterkirch or Grub, in the Langtauferrerthal, which they had reached by ascending the Wildspitze from Vent, descending by the Taschhach glacier, crossing the Oelgrubjoch to the Gepatschhütte—all in one day—and next day crossing the Weissejoch, effected in 8½ hrs. (including halts and an hour or two lost in reconnoitring) the ascent of the Weisskugel by the Bärenbartgletscher and Joch. The *séracs* of the former were turned by traversing, in 2 hrs., the very steep icewall coming down from the rocks of the Bärenbartkogel. From the Joch, the very steep W. ridge, the rocks of which, however, are broken, led to the summit. The descent was made to the Hintereis Joch, and Mals gained that evening by the Matscherthal. This new route is important, because it offers the shortest way up the Weisskugel (the view from which is particularly splendid) from the Finstermünz road.

NORTHERN PEAK OF VORDERE OELGRUBEN SPITZE (about 3,346 mètres = 10,978 feet). *August 8.*—Messrs. J. P. Farrar and J. Harold Howard, with Alois Praxmarer of Feuchten, and Isaac Dobler of Mittelberg, ascended this peak. Starting from the Gepatschhütte, the regular path to the Oelgrubenjoch is followed for about 1 hour. In a short time from Gepatsch the peak comes into view rather to the left. It consists of a pair of rather short conical-shaped points.

Leaving the path one strikes slightly to the left up over a small snowfield and rocks to a kind of pass on the right (S.) of the peaks. This is reached in another hour, and from here a short steep climb of 20 minutes over rocks leads to the S. peak due N. of pass. This has been ascended about a dozen times. The N. peak is divided from the S. peak by a deep cleft. The rocks look rather bad, but present no serious difficulty—a little steadiness at one or two places being all that is required. Time from S. peak 25 min., return to S. peak 25 min. This N. peak is not known to have been previously ascended. It is about the same height as the S. peak.

The mountain is incorrectly placed on the Austrian Government map, but rightly on von Sonklar's and the D. and Ö. A. V. map. On the descent the party returned to the 'pass' before mentioned (which, however, is sheer on the W. side), and mounted the ridge forming its S. boundary, from whence the Taschhach hut is easily reached in 2 hours. This route forms a pleasant variation of the Oelgrubenjoch.

Dolomite District.

CREPPA DI FERMIN (2,667 mètres=8,750 feet). *August 4.*—Mr. J. Stafford Anderson, with Santo Siorpaes and Giuseppe Ghedina di Angelo, effected a new descent from this peak by striking a narrow 'col' of a few feet wide only lying between the Creppa and the two peaks S.W. of the Lago da Lago, and thence descending by the W. side

of the mountain to the valley between the Creppa and the Nuvolau. The col can only be made by descending several hundred feet of the route up, and then winding along the face of the rocks in a northerly direction till the gap comes into view.

NORTH-WESTERN PEAK OF THE MONTE CRISTALLO (c. 10,200 feet). *August 6.*—The same made the first ascent of this peak, which from Cortina is merged in the mass of the Cristallo proper, but which comes out clearly as a separate summit from a point just above the woods to the N.E. of Cortina. It is separated from the Cristallo by an impassable chasm of many hundred feet. No serious difficulties were encountered, but there were one or two places worse than anything on the Cristallo. The ascent was made through a glen W. of the Cristallo mass, and then by the S. arête. The summit (about 500 feet lower than the main Cristallo) was gained in less than 6 hours from Cortina, including halts.

PEAK TO THE S. OF THE VAL LARSEC* (3,172 mètres=10,407 feet). *August 13.*—The same party, starting from Vigo di Fassa, crossed the space descending from the Cima di Mugoni, and thus gained the Vajoletti thal, crossing which they ascended a steep rocky couloir the nearest to the desired peak on the E. side, and found themselves in the secluded Val Larsec. The peak was gained without much difficulty, though from below the rocks looked bad. It is marked 3,172 mètres on the Austrian map, but this estimate seems exaggerated. Returning to the screes at the base of the peak, they then struck N.W. and crossed by Mr. Holzmann's pass,† back into the Vajoletti thal. Circling round the head of this valley, with the Kessel Kogel rising boldly to the right, they reached the ridge to the W. of the extreme head of the valley. The descent on the other side lay through a couloir which was by no means easy. They then reached the north side of a spur (which would probably lead into the Tiersthal), which juts prominently into the valley, and had to descend it some way before they could get down the south side. This pass resembles in some points, but is not identical with, the N. Tschagerjoch, described by Mr. Freshfield.‡ The rock scenery throughout the day was magnificent. Fourteen hours, including halts, may be reckoned as the time required.

Adamello District.

PRESANELLA BY N.E. ARÊTE (3,562 mètres=11,687 feet). *August 4.*—Dr. Bruno Wagner and Herr Edward Kratky, with Johann Grill (vulgo Kederbacher) of Ramsau (Bavaria) and Bonifacio Nicolussi of Molveno, left Fort Strino on the Tonale Pass, at 1.3 A.M. Mounting by the Val Stavel, they reached at 6 the highest *malga*, and at 7 the Presanella glacier. Instead of going to the right, in the direction of the Ceren Pass, whence Mr. Freshfield made the first ascent of the Presanella, the party went to the left, directly towards the eastern buttress, which supports the highest peak of the

* This peak is locally known as 'Vajolet.'

† *Alpine Journal*, vol. x. p. 111.

‡ *Ibid.* vol. x. p. 72.

Presanella. Here the glacier is extremely broken, which made the ascent decidedly difficult; the passage of the great bergschrund giving some trouble, and requiring much time. By a steep snow-couloir the party reached two very characteristic rock-turrets, situated on the ridge nearly half-way between the Presanella and the Cima d'Amola, and immediately afterwards a pass commanding a fine view down to the Amola glacier. It is probable that this pass is the Bocca di Presanella, which was crossed by Messrs. R. Gaskell and M. Holzmann in 1880.* From the pass the party continued the ascent by the N. E. rock ridge. This arête presented great difficulties on account of the rottenness of the rocks. Two of the party were hurt by dislodged stones, and the ice-axe of one of the travellers was carried out of his hand down to the Amola glacier. At 2.5 p.m. the highest peak of the Presanella was reached after a 13 hrs. climb (including three short halts). The descent was made by the Nardis Glacier to Pinzolo.

Among the new expeditions made by foreign climbers, and of which reports have as yet been published, three seem to call for special attention.

One is the first ascent of the north-east and highest peak of the Sasso di Mur,† achieved on August 23 by Herr Demeter Diamantidi, with Luigi Cesaletti of S. Vito, and B. Mariano of Sagron. Starting from Sagron at 4.30 a.m., the party reached the Comedon Pass, and then the 'Pia della Regina.' In 2 hrs. more they gained the 'Finestra,' a hole pierced in the rock wall, and in an hour more, a very difficult 'cheminée' on the south-west face, by means of which the highest summit was gained at 1.50. On the descent, 1.45 was taken to the 'Finestra' and the Passo di Cimonega‡ (not Cunonega) was reached in 1.35 more, partly by means of a rocky ledge which encircles the peak.

On July 25, Herr Dübi, with Fritz Fuchs and Peter Lauener, discovered a new way up the Jungfrau from the Roththal, which avoids the great couloir. It lies up the ridge separating the Roththal from the Silberlautobel, at first up steeply inclined calcareous rocks, which higher up become broken, and lead to the glacier between the Silberlücke and Jungfrau, joining the route from the north. Herr Dübi took 9 hrs. (including halts and much time lost in reconnoitring) from the club hut in the Roththal to the glacier just mentioned. He states that the new route is arduous, but quite free from any danger of avalanches, and that he did not notice any falling stones.

Mons. Charles Rabot made, on August 8, the first travellers' ascent of Sarjektjåkko (7,005 feet), the highest peak of Northern Scandinavia, and the existence of which was ascertained for the first time in 1880 by the Swedish officers engaged on the Government survey, and who made the first ascent. The view is described as thoroughly alpine.

ALPINE ACCIDENTS.

It is with the deepest regret that we have to record several fatal accidents which have occurred in the Alps during the past summer.

* *Alpine Journal*, vol. x. p. 105.

† *Ibid.* vol. ix. p. 114.

‡ *Ibid.* vol. x. pp. 69-70.

Of these the most terrible and instructive is that which, on August 8, caused the death of Signor Damiano Marinelli and his two guides, F. Imseng, of Macugnaga, and Battista Pedranzini, of Santa Catarina, near Bormio, during an attempt to make the ascent of Monte Rosa from the east. The Rev. F. T. Wethered, who was at Macugnaga soon after, gives the following details in a letter to the *Times* :—

I venture to send a few more details of the sad accident near here than you have, I think, already received. Signor Marinelli, with his two guides and a porter, left this hotel at a little before 10 on Monday morning, the 8th inst. They ascended from the direction of the Belvedere, straight up the Jäger Rûcki, which forms the proper right bank of the Rieghl Glacier, and thence crossed the snow couloir which descends from the Nord End of Monte Rosa. This was passed without difficulty, and the rocks on the south side of the couloir (immediately under the summit of the mountain) were gained. The party was about half an hour from the place on the rocks upon which they proposed to pass the night, when the porter (who alone survives) states that one of the party exclaimed, 'Avalanche!' and that, directly after, Imseng was overturned by the force of the approaching mass, consisting of snow and rock and ice. The other two were also carried down. The rocks on which they were climbing were not difficult, and the party was unroped. The porter had just before stopped to drink water, and was, consequently some ten or fifteen paces behind the others. To this circumstance he owes his life. He ran home immediately to Macugnaga with the news of the accident. I saw the poor fellow to-day, and he seemed still to be much overcome by what he had witnessed last Monday. The avalanche was of an enormous size, and to such a distance was the snow carried by it that the goats on the Pedriolo Alp were sprinkled with it. It is generally believed here that some, at any rate, of the party must have been killed by the blast caused by the avalanche as much as by the avalanche itself. The bodies, when recovered, were terribly mutilated.

Signor Marinelli's remains were brought in on the Thursday; Ferdinand Imseng's on the Saturday; and I met the procession of villagers bearing the body of Battista Pedranzini, the guide from Sta. Catarina, as I entered Macugnaga this afternoon. Pedranzini leaves a wife and six children. The others who perished were unmarried. Imseng was the first to ascend Monte Rosa from the Macugnaga side. He was deservedly respected by all who knew him as a courageous, cheery, and most upright guide. His loss is deeply felt here.

There can be no doubt that the day was badly chosen, being hot and close, and that the party should not have crossed the couloir at so late an hour as 5 o'clock. Mr. Pendlebury's party, in 1872, slept on the Jäger Rûcki itself without crossing the couloir to seek a sleeping place. Monte Rosa, however, from the Italian side must always be a hazardous ascent.

Signor Marinelli was one of the most distinguished members of the Italian Club, and had devoted himself to climbing many great peaks, especially in the Bernina district, from the Italian side, his latest feat being the ascent of Piz Roseg on July 14 last. The ascent of Monte Rosa from Macugnaga, first made on July 22, 1872, by Rev. C. Taylor, Messrs. R. and W. M. Pendlebury, and repeated on August 10, 1880, by Herr R. von Lendenfeld, must always involve the greatest danger of avalanches, a danger which can only be averted by the utmost prudence in choice of route and time. The immediate cause of the late accident seems unfortunately but too clear; the party attempted to reach a bivouac higher than the usual one, and were on the steep snow slopes at a late hour of the afternoon. This neglect of the most ordinary precaution had its natural consequence. Pedranzini leaves a widow

and six children (the eldest nine years old) in bad circumstances; Imseug was unmarried and comparatively well off. A subscription was at once opened by the Central Section of the Italian Club; contributions may be sent direct to the secretary of the club, Signor Paolo Palestrino, 13 Via Lagrange, Turin; or may be forwarded through the Editor of the 'Alpine Journal.' Mr. W. M. Conway has collected and forwarded 150 francs to be devoted to the erection of a monument to Imseug.

The great snowstorm at the beginning of September was fatal to at least one English traveller. Mr. H. Latham, a London solicitor, started on September 4 for a solitary ramble to the point called Burg, above the Bussalp, near Grindelwald. He had climbed it, not by the ordinary way, but by the rocky south face, and on the descent slipped in the fresh snow, and started an avalanche which swept him away. About the same time Miss Corbett lost her life by a slip on the S. face of the Mont de la Saxe, near Cormayeur, which she had just ascended with her sisters, but apparently without guides.

The other accidents we have to chronicle are of a somewhat different character. On August 18 a party started from S. Christophe, in Dauphiné, to cross the Col de la Lauze to La Grave. One of its members was Mdlle. Mélanie Dupré, sister of the curé of S. Christophe, and the chief guide was Roderon. Having passed by the Lac Noir and reached a point in the Glacier du Mont de Lans overhanging the Vallon de la Selle, they were overtaken by a mist, and after many wanderings were obliged to spend the night on the glacier. From the effects of the exposure Mdlle. Dupré, who, we understand, was in an advanced stage of consumption, died early the following morning, before the Refuge de la Lauze could be reached.

On August 27 the Rev. F. W. Holland, vicar of Evesham and Rural Dean, while ascending the Niesen, near Thun, lingered behind his party owing to fatigue, and was discovered dead the next morning. Heart disease and exhaustion are assigned as the causes of this sad event.

Yet another carriage accident has taken place on the Tête Noire. A Dutch party, consisting of Dr. Brogheman, his wife and daughter, left Chamonix in very heavy rain, which had so swollen the torrent that it undermined and covered a portion of the road between Vallorcine and the Barbérine inn. The driver, unable owing to the flood to see the injury to the road, managed to save himself by a desperate leap, but the three unfortunate travellers were swept away with the char.

We notice a growing tendency, much to be lamented, among the younger school of climbers to dispense with well-recognised safeguards, and as the success of a risky expedition leads many who imagine that the dangers of the Alps have been greatly exaggerated to try to follow in the steps of far more experienced climbers without proper training or preparation, it is as well to have it clearly brought before one now and then (and this is the lesson to be learnt from many recent accidents and adventures in the High Alps), that mountaineering is a science which has its own rules, and that a neglect of those rules must frequently bring with it its own punishment. The danger of 'sensation' ascents lies perhaps less in the actual risk incurred by the first party than in their influence in encouraging persons of little or no experience to undertake them without realising

to what a perilous, and, in their case, foolhardy enterprise they are committing themselves. Mountaineers will do well to lay to heart the excellent advice which we reprint from a former number of this Journal. 'In former days a good guide could hardly be induced to undertake an expedition which involved venturing for any length of time upon ground habitually swept by avalanches or stonefalls. The instinct which led him to recognise and avoid such places was valued as an important part of his professional skill. Should climbing enthusiasm ever overcome this instinct, and lead guides and their companions frequently to expose themselves to the danger of being swept away, we must be prepared for a succession of terrible accidents. Mountaineering, properly pursued, is, for the most part, a game of skill, and it ought not to be turned into mere gambling with fate. The Alpine Club, by encouraging "New Expeditions," incurs some responsibility; and this seems the proper place to suggest a caution, the need of which is strongly felt by many of its members. It is better to offer a warning in season than to draw a moral from an irretrievable disaster.' The danger from natural avalanches or falls of stones is not, however, the only one which is now too rashly incurred. A crowd of travellers on a rock face are in the highest degree dangerous to one another, owing to the stones they dislodge. A striking illustration of this is the fact that during the past summer two cases of injury from such dislodged stones occurred on the Zermatt face of the Matterhorn, in one of which the traveller, an American gentleman, was severely hurt.

Herr Strasser, the Pfarrer of Grindelwald, informs the Editor that the fund for Rubi and Roth now amounts to 16,095 francs. He makes a warm appeal for C. Inäbnit, with respect to whom Mr. Alfred E. Craven writes: 'Christian Inäbnit of Grindelwald, who last year met with an accident on the Jungfrau, is quite incapacitated from work, and his recovery is entirely hopeless. His spine is severely injured, and it is feared his lungs are also affected. He has been discharged from the hospital after three months' treatment, but is no better than when he entered it, and he suffers so much that he can turn his hand to no sort of work. He has a wife and several children, and nothing with which to support either them or himself. It is a very hard case; and, as I can testify to his being a most deserving man (as he has been my guide for many years), I shall be most thankful to any one who will assist him, and will gladly receive (132 Cambridge Street, Warwick Square, S.W.), acknowledge, and see to the proper disposal of any subscriptions sent to me on his behalf.'

[The Editor will be happy to receive and forward contributions for any of the above cases.]

REVIEWS.

Annuaire du Club Alpin Français. 7^{ème} année, 1881 (Hachette, Paris: 1881).

Another volume of this Annual has appeared, and is as stately as usual externally. The influence of the death of Monsieur Joanne, the

creator and leading spirit of the French club, is however seen in the list of contents, which contains fewer narratives of 'grandes courses' than ever. The editors plead their lack of experience, and we hope that this may be the reason of a change which cannot fail to strike any one who turns over the pages of this splendidly got-up book. It would indeed be a subject for regret if the brilliant Alpine feats of our French colleagues were not to be continued in the future.

Prefixed to the *Annuaire* is the address delivered by M. Xavier Blanc by the graveside of the late Mons. Joanne. It is an excellent piece of work, worthy of the late and present presidents of the club.

In the space at our command we cannot pretend to do more than mention a few of the chief articles.

Mons. Duhamel's articles on the *Ecrins* from the south * is already favourably known to our readers. Mons. Perrin describes a week's ramble in Dauphiné, and promises a photographic panorama of the view from the Grande Ruine (one of the most glorious and extensive in the district), which will be distributed to the purchasers of the *Annuaire* at a later date, owing to an accident to the plates. A short article by M. Salvador de Quatrefages relates the brilliant opening of a campaign in the Cottians, unfortunately cut short by his accident.

Mountaineering without guides is represented by the MM. Puiseux, who give vivid accounts of their experiences on Mont Blanc, the Pic du Tacul, and the Aiguilles de Béranger and de Miage. We would point out to M. Köhler, who also describes his ascent of the Aiguille de Miage, that the first ascent of that peak is believed to have been made in 1858 by Mr. E. T. Coleman. The writer was on the peak in July 1869,† and it was not the first ascent that summer. Mons. Rochat contributes an important article on his ascents in Savoy, notably his traverse over the summit of the Mont Pourri from the Dôme de la Sache to the south (3,611 mètres—which was first ascended in 1861 by Messrs. W. Mathews and F. W. Jacomb‡), to the Aiguille du Saint Esprit (3,615 mètres) on the north. Mons. Ferrand does his best by precept and example to attract visitors to the ranges round Allevard, which, though so near Grenoble, have not been thoroughly explored. We regret to see that M.M. Arnollet and Reymond (pp. 130, 144) deny that Mr. W. Mathews reached the highest point of the Grande Casse. As is clear from Mr. Mathews' original article, § and his explanatory letter, || he declined to walk on an overhanging cornice of snow which crowned the highest rocks. But then, in 1860, men had more regard for their lives than in 1880. And as a rule the cornice does not exist save in very snowy years, such as 1860.

There are many articles relating to the Pyrenees (specially some

* It may be mentioned that Mons. Duhamel was lucky in his experience of this mountain. The writer made the ascent by the new route on July 11, but encountered the most serious difficulties, owing to rocks glazed with ice, and consumed over seven hours walking from the Col des Avalanches to the summit, descending by the ordinary route.

† *Alpine Journal*, vol. iv. p. 384.

‡ See *Peaks, Passes, and Glaciers*, 2nd series, vol. i. p. 394.

§ *Ibid.* p. 374.

|| *Alpine Journal*, vol. viii. p. 225.

very valuable tables of heights) and the Spanish march. We note that Mons. E. Wallon continues his praiseworthy explorations in Upper Aragon, and we may be allowed to express a hope that, when they are completed, his articles and map may be published in a separate form.

Foreign countries are represented by articles on certain peaks of Algeria, Spain, and Norway. Among the scientific articles, a sketch of the geological history of Mont Blanc by M. Vézian, the history of the establishment of an observatory on the Pic du Midi near Bagnères de Bigorre, the continuation of M. Grad's excellent studies on the orography of the Vosges (the massif of the Ballon d'Alsace being described this year), and M. Venance Payot's observations on the oscillations of the four great Chamonix glaciers in 1880 are the most remarkable.

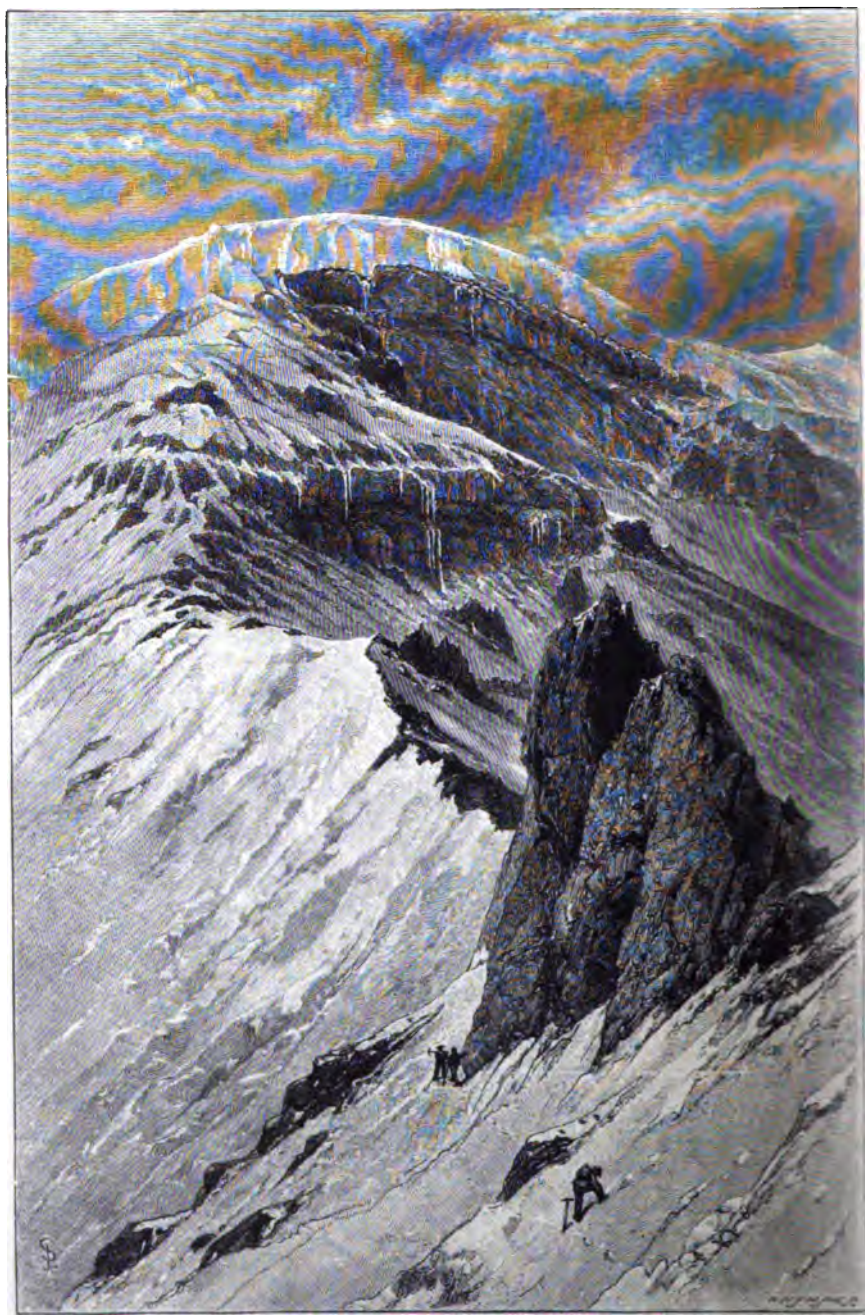
From the interesting 'Chronique du C. A. F.' we learn that on July 1, 1881, the club numbered 3,838 members distributed among 28 sections. We notice with pleasure that an index has been added to the *Annuaire*.

Annuaire de la Société des Touristes du Dauphiné. 6^{ème} année, 1880 (Allier, Grenoble: 1881).

As usual the Annual of this flourishing and active local Society includes much of interest. Besides the very useful reference list of all excursions made in Dauphiné during the summers of 1879-1880, we have Mr. Gardiner's spirited account of a well-spent week in the Vallouise, Mons. Duhamel's article on the passes between the Romanche and the Vénéon, already published in this Journal, and a lively account of some expeditions by Mons. C. Verne, specially of an ascent of the S. peak of the Pic d'Olan, for which the party started at 7.20 A.M. from La Chapelle en Godemar. Mons. Ferrand describes the little known ascent of the Grand Veymont in the Vercors. Some valuable documents are published relating to ascents of the Mont Aiguille in 1492 and in 1834, to which, as well as to the valuable study (of which the topographical part alone is published here), accompanied by a detailed map, of Mons. Rochas d'Aiglun, we propose to refer again hereafter. All explorers of Dauphiné will gladly admit the great obligations under which they are to this Society, the success of which is shown by the fact that it numbers 611 members.

Errata.

- Page 259, line 20, *for* 'Brevort' *read* 'Brevoort.'
 " 280, " 7, *for* 'Fernanjocho' *read* 'Fernanjocho.'
 " " 12, *for* 'cf.' *read* 'of.'
 " 288, " 18 from bottom, *for* 'Balenhorn' *read* 'Balmhorn.'



CHIMBORAZO, FROM ABOVE THE THIRD CAMP.

THE
ALPINE JOURNAL.

FEBRUARY 1882.

EXPEDITIONS AMONG THE GREAT ANDES OF ECUADOR. V.

By EDWARD WHYMPER.

April 21, 1880. From Cayambe Village to the Town of Otobalo.

—We got away from the village at 8.50 A.M., taking at first a northerly course, then bearing gradually round to the west; and arrived at the summit of the pass between the great mountain Mojanda and the smaller one la Compania, at 11.30 A.M. From this place Cayambe village bore S.S.E. Encountering heavy rain-storms, were obliged to hurry down, and put up for the night at the town of Otobalo (8,450 feet). There was a decent little inn at this place, kept by an Ecuadorian, who was very attentive and polite. A dozen fighting-cocks, tied up in the courtyard, enlivened our slumbers.

„ 22. *From Otobalo to the Town of Cotacachi.*—Left the heaviest part of our baggage behind, and moved on at mid-day to the town of Cotacachi (7,970).* This place is in the heart of the province of Imbabura, situated in a comparatively well-wooded and fertile country, much of which is under cultivation, and presented an agreeable contrast to the sterility and nakedness of the greater part of the districts through which we had hitherto passed. There was no ‘tambo’

* Altitude deduced from the mean of two observations of mercurial barometer. Reiss and Stübel's altitude deduced from the mean of 24 observations is 8,048 feet.

at this place, and the priest courteously allowed us to stop in his house. He said that there were 5,000 Indians and 3,000 whites in his parish. The districts round the town, and to the north and south of it, were the most densely populated we had seen in Ecuador; and the natives were evidently prosperous, though this is the region which is most frequently disturbed by earthquakes. Intemperance is common. So far, we had seen only two intoxicated persons in the whole country, but here we sometimes saw a dozen in a day.

By frequent levellings at different heights on Cayambe mountain, it had been determined that Cotocachi mountain was the loftiest peak of its district, and that of its two summits, the southernmost was the highest. To reach this was now our aim, by a route which had been settled; but, as the whole country was seamed with earthquake ravines, it was necessary to secure local guidance over the lower part of the mountain, and we obtained a proper person—a Columbian—by the assistance of our host.

April 23. From the Town of Cotocachi to Camp on Cotocachi.—Got off at 6.35 A.M., bearing a letter from the priest to the proprietor of the highest habitation on Cotocachi, a small farm called Iltaqui (10,050). The route taken to reach this place was circuitous, and we met the owner on the road, who instructed an Indian in charge of the farm to accompany us as high as mules could go. This he did, bringing us up to and along a ridge running nearly south from the highest point, and to a point not far from the place at which we desired to camp. Until 2.30 P.M. the weather was reasonably good. It then commenced to snow, and to blow hard, and whilst we were establishing our camp (14,490) the whole of our assistants bolted, dropping their loads all over the mountain, and leaving the Carrels and Verity to do as best they could. They had a difficult task, for the wind was frightful, and snow fell continuously. Passed a night of torment, living principally on chlorodyne and laudanum.

„ 24. *The First Ascent of Cotocachi, and Descent to Iltaqui.*—Six inches of new snow around the tent in the morning. The wind had been terrible in the night, blowing in squalls, which almost carried us away.

Start was delayed until it moderated, and we left at 8.25 A.M., with very little expectation of reaching the summit, Verity remaining behind as camp-keeper. The mountain was plastered all over with new snow, but it cohered well, and by keeping to the sides of couloirs, and trusting more to rock than to snow for footing, we made fair progress, and reached the very highest point (16,289)* at 11.35 A.M. The view was limited to the immediate neighbourhood of the mountain. Mosses were found on the highest rocks. Wind was very high at the summit, and intensely cold, though the lowest observed temperature was 36°·5 Fah.

Commenced descent at 12.20, and got to the camp at 2.15 P.M., going fast the last part of the way. Found Verity in difficulties. The tent had doubled up owing to the wind, and he was unable to right it. One of our followers had come up during our absence and had been instructed to bring up the rest with the beasts by mid-day. At 3.20 P.M. they had not arrived, and we started for Iltaqui, carrying all we could, though leaving the bulk of our properties behind. Found our rascals ensconced under a comfortable rock 1,500 feet below, left Louis and Verity to communicate with them, and pushed on with Jean-Antoine. Got to Iltaqui about 7 P.M., very wet and without food. The Indian was uncivil, and though in the possession of plenty of food and firing, refused to give us anything or to admit us. Verity and Louis arrived shortly before midnight. All put up outside the hut.

April 25. From Iltaqui to the Towns of Cotacachi and Otovalo.—Made the Indian well understand through Verity why we complained, and then gave him a good thrashing. Cevallos and the beasts not having arrived by 7.50, we moved down to the town, arriving at 10.55, and again put up with the priest, who behaved with great kindness—and set before us a good meal. Our baggage and animals arrived several hours later, and on looking for the brandy and other spirits, it was found that all had evaporated. In-

* Altitude deduced from a single observation of mercurial barometer. Reiss and Stübel, by triangulation, made the height of our point 16,273 feet.

vited the Political Chief and the Chief of the Police to the priest's house, introduced our arrieros to them, and said before all that it would have afforded us pleasure to have offered his Reverence and their Excellencies a glass of brandy, but that unfortunately we were unable to do so, as all our spirits had evaporated whilst in charge of the arrieros; and concluded with the observation, addressed to my people, that if brandy and aguardiente evaporated again whilst in their charge, I should either stop ten times its value out of their pay, or hand them over to the police, whichever they preferred. The Excellencies looked serious, and Cevallos commenced to bluster, but ended in tears. Arrived at Otovalo at 5 P.M., having heavy rain again on the way.

April 26. At Otovalo.—This journey to the north of Quito had occupied three times the time we desired; and, as we were obliged to quit Ecuador by a fixed date, it had become almost certain that, if we held together, we should not be able to do all the work we wished. I therefore now despatched the Carrels to Quito in charge of most of the recent collections, instructing them to deposit the goods at Giacometti's hotel, and then to proceed southwards to Machachi, and thence to attempt to ascend Illiniza from the north; and not to show their faces again until they could show me its highest rocks. In the meantime I was to proceed to the north of Otovalo, in quest of antiquities and information in general.

The Carrels started for Quito, with David and the jovial man, about mid-day, with the beasts and baggage; leaving Cevallos and Verity with four mules at Otovalo. The exposure on the night of March 31, and the rough life we had led afterwards, had brought on a return of inflammation of the bowels, and I passed this day and the next in bed, without having either food or medicine proper for the occasion.

„ 28. *From Otovalo to Ibarra, viâ Pinsaqui and Hutan-taqui.*—The town of Ibarra is the most northern one in Ecuador; and, like Otovalo and Cotocachi, was utterly ruined during the last great earthquake. It is now recovering from this catastrophe, though all its principal buildings still remain in ruins.

Brought letters of introduction to Señor Teodoro Gomez de la Torre, the greatest proprietor of these

parts, and one of the very few gentlemen we met in Ecuador. We were received with the greatest politeness, and were lodged in handsome apartments surrounding a courtyard filled with palms. Our host is said to employ more than a thousand persons on his estates. On the assassination of Garcia Moreno, he was nominated for the Presidency of the Republic, but, to avoid dividing his party, he retired in favour of Borrero, who was elected, and was subsequently ejected by his own *protégé*, His Excellency the present President of the Republic.

April 29. At Ibarra, and Excursion to Carranqui (birthplace of Atahualpa).—One of the especial objects in coming to this district was the collection of antiquities, which there was reason to believe would be found in large numbers. This supposition proved correct. No collector appears to have visited this neighbourhood before, and our acquisitions were numerous and valuable. My increasing weakness, and total inability to procure proper remedies, obliged me to leave before the surface had been barely skimmed, and had we been able to wait a few days longer a rich harvest would have been secured.

All the country hereabouts is covered with tumuli, from 30 or 40 feet up to 300 or 400 feet diameter, of various ages, though all, so far as is known, of dates earlier than the Spanish conquest. These tumuli are known to yield objects in metal, pottery, and stone, and some of them have in recent years been subjected to the operations of a joint-stock company. As the members of this association cared for nothing except GOLD, they were disappointed with the pots and skeletons which were brought to light, and ultimately gave up the business as a bad speculation. Objects of great age in gold or silver are now very rarely met with in Ecuador, but pieces of pottery and stone implements are numerous. It took, however, time to instruct the natives, for they had not apparently ever heard any one enquire for 'stones of the Incas,' though, when specimens were exhibited, others were brought in from all directions. Rode over to Carranqui in the afternoon, and at night returned to Ibarra.

„ 30. *From Ibarra again to Carranqui, and then back to Otavalo.*—Went over again to Carranqui in the

morning, and obtained about twenty objects. The priest, the political chief, and the Governor of Ibarra, all promised to collect and to forward objects to Quito, but nothing was ever heard from them. This was our invariable experience elsewhere. Left Ibarra at 12.35 P.M., and rode quickly through the villages of S. Antonio and Hutantaqui towards Otovalo. Tremendously heavy rain set in about 3 P.M., and we were stopped six miles north of the town by a swollen torrent, and waited an hour and a half for it to subside. Sent Verity in meantime to a neighbouring farm to pick up some things which were waiting for us, but he did not return, and we proceeded without him, arriving at Otovalo an hour after sunset, having had much trouble in the dark in finding the road, as the track was badly cut up and washed away.

May 1. *At Otovalo.*—Had baggage packed and beasts saddled at an early hour for return to Quito, but Verity did not appear, and we could not get off without him. Received a good deal of kindly help from a Yankee Jew, who was travelling through the country, dealing in everything from human hair down to watches. At 3.15 P.M. my interpreter turned up, with the lame story that he and his horse had been carried away by a torrent. Looked at my field-glass, which he had been carrying, and found that it had not been wetted. I heard afterwards that he had been occupied on some business of his own. As my indisposition was rapidly increasing I strongly felt the necessity of immediate return to Quito.

„ 2. *From Otovalo to a Ditch on Mojanda.*—It was my intention to return to Quito in two easy days, resting the first night at the village of Malchingi, or at the large farm of Alchipichi. By one thing and another start was delayed until 11.30 A.M. Road led across the great mountain Mojanda (14,088 feet, Reiss and Stübel), which is a prominent object from Quito, and covers perhaps more ground than any mountain in the Ecuadorian Andes. Summit of the pass was about 4,000 feet above Otovalo, and the track across was in a wretched state, muddy, and slimy beyond description. Kept together till near the summit, and then pushed on with Verity, leaving Cevallos driving the two baggage animals. After about half an hour heard shouts behind and saw Cevallos running and waving

his arms to us to stop. Concluded that there was an accident, and returned immediately. Found that one of the beasts had slipped, rolled head over heels down a slope for about 100 feet, had then fallen over a cliff about 80 feet high, and then had rolled some distance further. The load had become detached and was lying in a muddy pool. By this smash lost the whole of the best pieces of pottery we had collected, and had to throw them away. Photographic apparatus was shattered, and clothes were saturated with mud. *The mule lost the tip of one of its ears, but otherwise was unhurt*, and appeared to have been saved by its load. Picking up the scattered fragments, and repacking, caused much loss of time, and at sunset we were several hours distant from the nearest house. Went on, however, until Cevallos and Verity implored me to stop, then all dropped down and camped in a muddy ditch, a part of the track (12,000 feet). There was nothing to burn, and we passed 11 hours in darkness, saving such light as we could get out of two inches of candle which I fortunately had in my pocket.

May 3. From the Ditch to Quito, via Bridge of Alchipichi.—Our first day's journey having been thus cut short, there was a heavy day's work left. Started at 6 A.M., and arrived at Malchingi in three hours. Breakfasted and engaged a fresh man and additional beast in place of the animal which had slipped, and at 11.30 went on. As far as the bridge over the river Guallabamba the track was in decent order. Crossed bridge at 2.15, and got to the top of the other side of the great Quebrada at 3.25. Here we left the baggage animals and two arrieros, and pushed ahead, arriving at Quito at 10 P.M., having on the latter part of the way heavy rain and roads much cut up. I felt perfectly exhausted, and was informed by my friends that I looked fit for the grave.

„ 3—*June 6. At Quito.*—The necessity of getting rid of my rather serious indisposition determined me to stay at Quito until fit for work, and it took nearly five weeks before a cure was effected. During this time wrote a large number of letters to Europe and elsewhere, packed and despatched to Guayaquil the bulk of the collections (filling 20 cases), sold off

surplus stores, and made various small excursions in the neighbourhood of Quito.

Jean-Antoine Carrel came in a day or two after my return, reporting that he and Louis had ascended Illiniza from the north, and presented specimens of the highest rocks. Louis remained behind at Machachi, keeping guard over stores, and enjoyed an easy and monotonous month alone, improving much in appearance and condition. J. A. Carrel remained at Quito, taking part in the excursions, and made himself generally useful. Verity became more and more unsatisfactory; was found to be drunken and largely in debt; and ultimately discharged himself. Engaged a little Quitonian—Campaña by name—of Indian extraction, in his place as interpreter.

On May 15–18 made an excursion to the Pyramids erected by the French Academicians on the plain of Tumbaco, to the north of Quito.* Subsequently visited H. E. the President of the Republic, and several high officials, receiving many *promises* of information and assistance from them. Vainly endeavoured to obtain information in his special departments from the Director of the Observatory, a German Jesuit named Menten. Received much kindness and attention from several of the foreigners in Quito, especially from the Chilean Minister, who left the country soon afterwards, being appointed Prefect of Lima, on the occupation of that city by his countrymen.

Met also at Quito M. Charles Wiener, who is reputed to have reached the height of over 20,000 feet on Illimani. I ascertained that he had determined his altitude by aneroid barometer. The imperfect manner in which aneroids work at great elevations† renders it not impossible that the height reached by M. Wiener was over-estimated, though, in remarking this, I do not in the least degree question his good faith. I found M. Wiener exceed-

* See 'Proc. Royal Geog. Soc.,' Aug. 1881, p. 463.

† The best of my aneroids read 13·050 inches and 12·900 inches on the summit of Chimborazo, against 14·100, the reading of the mercurial barometer, and indicated an elevation much in excess of the truth. The case was the same elsewhere.

ingly frank, and passed many pleasant hours in his company. He left Quito on May 24, 1880, on his way to the head-waters of the Amazons, where he is still engaged in exploration.

The long detention at Quito, although vexatious, was not without advantages. We were able to thoroughly mature plans for the remainder of the journey, and when we started southwards on June 7, were all in good condition, and were more perfectly equipped than before; so that for the remainder of the time we travelled with a certain degree of luxury. Campaña proved a great acquisition, and was excellent as a working interpreter and general assistant. Cevallos was re-engaged, for his failings notwithstanding he was a useful man. David had been unexceptionable throughout, and desired to continue; but I dispensed with the services of the jovial arriero, and engaged in his place a strong and very willing lad from Machachi, who had ambition to get upwards. These four men (occasionally assisted by others) remained with us continuously up to the last, and performed their work in a very satisfactory manner.

It was understood on leaving Quito that the mountain Sangai would have to be eliminated from the programme, as a journey to it would alone have occupied several weeks. It was our intention to ascend first Illiniza, then Altar, next Carihuairazo, and lastly Chimborazo from a new direction; and then to proceed to Guayaquil by what was termed the railway route. The manner in which this was done will be described in the next number.

(To be continued.)

AROUND KANDERSTEG. By ALFRED E. CRAVEN. (Read before the Alpine Club, May 31, 1881.)

I HAVE always found much satisfaction in doing anything thoroughly, and as an ordinary lifetime is too short to accomplish this with regard to the whole of the Alps, I found that the next best thing to do was to work out small districts, and, by ascending all the peaks within them, acquire a thorough knowledge of their beauties, difficulties, geology, &c.

This I have tried to do in several parts of Switzerland, and I propose to describe in this paper some expeditions amongst the Blümlisalp and the Altels groups, my favourite ranges, and at the same time those best known to me.

The range of the Blümlisalp is a long, nearly straight ridge running about W. S. W. and E. N. E., commencing with the Fisistock on the west, and ending in the Tschingelgrat on the east. It may be considered as being divided near its centre into two parts by the depression of the Gamchilücke, the Blümlisalphorn (12,041 feet) being the culminating point of the western division, and the Gspaltenhorn (11,260 feet) that of the eastern one. To the south the range is a long precipitous line of rocks bounding the Tschingel glacier, while to the north it is covered with snowfields and glaciers of great beauty.

Each principal peak of the Blümlisalp ridge has a northern outlier; the Blümlisalphorn has the Oeschinen Rothhorn, the Weisse Frau has the Blümlisalpstock, and the Morgenhorn has the Wilde Frau; in like manner the Gspaltenhorn has a northern outlier in the Büttlassen.

Some years ago, while ascending the Kanderthal, I was much struck with some remarkable-looking peaks which dominate the Kienthal, and which from the bridge over the Kander near Reichenbach have somewhat the appearance of the fingers of an open hand belonging to an individual who has neglected to pare his finger-nails. These peaks proved to be the rocks composing the Gspaltenhörner, and I determined some day to ascend them, but many years passed before the opportunity presented itself. In 1879 my unfortunate friend and companion Dr. Moseley and myself intended to make the ascent, but bad weather set in, and we could not afford to lose time in waiting for a change, as the peak was a comparatively unimportant one. That year, however, I ascended nearly all the peaks and outlying rocks of the Blümlisalp situated to the west of the Gamchilücke, and from many of these the appearance of the Gspaltenhorn was so grand, that I determined to make it one of the chief objects of the programme of the following summer. I will here mention that the Wittwe, also called Dündenhorn (9,410 feet), is admirably situated for a view of the Blümlisalp range. It is easily accessible both from the Dündengrat and from the châteaux of Ober Oeschinen. Most of the Oberland guides, when asked about the ascent of the Gspaltenhorn, shook their heads, and said it was very difficult and dangerous; some even asserted that it was the most difficult ascent in the Oberland.

In 1867 Messrs. Hornby and George attempted the ascent, but the final slope being hard ice, they did not think the game worth the candle.* Next year Mr. F. Pollock was repulsed, evidently by the bad condition of the snow,† and Herr E. von Fellenberg, in attempting the ascent from the south, only succeeded in reaching a secondary summit of the mountain.‡ On July 10, 1869, however, Mr. G. E. Foster made the first ascent, the snow being again in a bad state, and considerable difficulties being encountered.§ Later in the same year Herr Bohren made the second ascent, followed shortly after by Herr Häberlin. The latter gentleman gives a terrible account of his ascent;|| his difficulties seem to have been endless, and the condition of his party on reaching the Bundalp in the Kienthal was really such as to raise compassion in the most stony breast. They arrived at that spot ‘minus’ ice-axes and caps, but ‘plus’ wounds on their knees and shoulders, after having spent a very long time on the mountain. He gives a very good sketch and outline of the peak from the Sefinenthal. But Miss Brevoort and Mr. Coolidge, who in September 1872 made the fourth ascent with Christian Almer,¶ encountered fewer difficulties than their predecessors, taking a little over 4 hrs. up from Messrs. Hornby and George’s *gîte*, and little more than 2 hrs. down. The fifth ascent was made by Herr R. Lindt in 1879.** Christian Almer, who had made the first attempt on the mountain with Messrs. Hornby and George, did not share the opinion of the other guides as to the difficulty of the ascent, and I was very glad to obtain his services and those of his son Christian. Accordingly, on August 24, 1880, we arrived in drenching rain at the Hôtel Mürren, where I was determined to await fine weather for an indefinite period, should the fates so will it. Mürren, as is nearly always the case, was full of pleasant company, among which were many attractive young ladies, and had I been detained there by weather for a few days, I should not have bemoaned my fate. The arrival of a mountaineer, with all the accessories of guides, ropes, axes, &c., is not an event of everyday occurrence at Mürren, as it is not a convenient starting-place for many ‘grandes courses.’ It was soon known that the Gspaltenhorn

* ‘Alpine Journal,’ vol. iv. p. 54. † Ibid. vol. iv. p. 156.

‡ ‘Ueber Eis und Schnee,’ by G. Studer, vol. i. p. 258.

§ ‘Alpine Journal,’ vol. iv. p. 382.

|| ‘Jahrb. d. S. A. C.’ vol. vi. pp. 32–57, with 2 plates.

¶ ‘Alpine Journal,’ vol. vi. p. 146.

** ‘Jahrb. d. S. A. C.’ vol. xv. pp. 542–545.

was to be ascended, and, as the summit is plainly visible from the hotel, much interest was taken in our proceedings.

The following day, the 25th, was fine, and at 1.30 P.M. we made a start for the sleeping-place, accompanied by a porter to carry blankets and cooking apparatus. I strolled on ahead of the party, and was not overtaken by Almer for some time, when, to my astonishment, I saw he was carrying an eight-foot pole. This being a weapon I had never seen used on a mountain before, I inquired what it was for, and Almer told me that Herr Sterchi, the landlord of the Hôtel Mürren, had begged him to carry this pole to the summit, and there attach a red flag to it, as a source of amusement for his guests. I own to objecting to flags on mountain-tops, but on this occasion I gave way to Almer's entreaties and allowed him to take it, on the strict condition of my having nothing to do with it, and of his telling them this on our return.

Crossing the Sefinen Furka at 4.45, we kept to the left, and, after having made a few useless *détours*, owing to the mist in which we were now enveloped, we reached at 6.50 the overhanging rocks above the Gamchi Glacier, which had afforded shelter to our predecessors. As far as mountain sleeping-places go, this one is pretty comfortable; its elevation is about 7,500 feet, and there is a spring of delicious water close at hand. By the time we retired to rest the sky was cloudless, and Almer pronounced the weather to be 'ganz sicher' for the morrow. We got off next morning at 3.25 A.M., leaving our porter to return to Mürren, and proceeded to toil up scree, varied by slaty shales, to the Büttlassenlücke, which we reached at 4.55. We then roped, and proceeded up some more scree, and up an easy snow-slope, till we reached some fine bold rocks, which Herr Häberlin has called the Leitergrat. A short time before reaching this spot, we passed the remains of what may be termed a ladder; it was composed of a single spar with a number of holes drilled through it, and into these the rungs were inserted and made to project on either side. It was cast on one side, not having apparently been used for some time, and was a very rickety contrivance. In descending I saw a similar article on the lower rocks of the Büttlassen.

A short scramble brought us to the top of the Leitergrat, and from this point a slight descent is necessary, as there is a sort of notch in the ridge; this is easily effected by a convenient little gully, which lands one on the ridge in the depression. From here the mountain looks very well, falling away in grand precipices on both sides. We indulged in 10 min. halt, to take in the view and also some refreshment, and after this, our

only stoppage during the entire ascent, followed the arête, which soon broadens out considerably, till we reached the foot of the Böser Tritt. It is from this point to the summit that the much heard of difficulties were supposed to exist. We found the first part composed of very steep and rotten rocks, but with care we soon managed to scramble up them and reach the final arête, consisting of snow even then in a bad condition, although it was only 7 A.M. This snow rested on hard ice on the Sefinenthal side, and on very much disintegrated rocks on the Kienthal side; keeping as much as possible on the latter, and moving only one at a time, by way of precaution, we reached the summit at 7.30. Almer unfurled his flag, and with my glasses I soon saw that it had been made out at Mürren, by the rush made from the hotel on to the terrace, in order to get at the large telescope placed there. The weather was lovely, and a few light passing clouds did not interfere with the view, which is very pretty looking down the Sefinenthal and the Kienthal, but not otherwise very striking.

At 8.20 we left the summit and descended the arête, as nearly as possible in the same steps we had used in ascending. The snow, bad before, was now in a detestable squashy state, after an hour and a half's sunshine, and great caution was necessary in every step.

On reaching the bad rocks young Christian and myself unroped, and paid out the rope to old Christian as he descended, till, when we had but a few feet more to spare, he found a tolerably secure spot where he could wait for us, and we hauled the rope up again. I then followed in the same way, and last of all young Christian, his father and I hauling in the slack of the rope as he descended. Repeating this manœuvre, we found ourselves at the base of the Böser Tritt, and thus across the only bad part of the mountain. It was in descending these rocks, I believe, that Herr Häberlin's party lost their axes and instruments; we luckily lost nothing, and did not cut either our knees or shoulders, but proceeded down to the Büttlarsenlücke, which we reached at 10 o'clock. After a good breakfast we went leisurely back to Mürren as we had come, across the Sefinenfürke, reaching the hotel at 3.20 P.M.

About an hour from Mürren we were met by a large detachment of the beauty and fashion staying at the hotel; a warm welcome greeted our return, and a good dinner and an animated dance finished the evening. Altogether the day had been a most charming one, in fact one of those of which every mountaineer has a little collection stored away in his memory.

As to the difficulties of the Gspaltenhorn, I can only say

as Mark Twain did of the industrious ant, that I think he is a 'strangely overrated bird,' but I have no doubt that under different conditions a good deal of difficulty might be encountered. First-class guides are necessary, and should be taken by anyone making the ascent.

From the summits of the Blümlisalp and the Doldenhörner, especially from the latter, one of the most striking sights is the northern face of the *massif* of the Balmhorn and Altels. A large glacier descends between these two peaks towards an alp, the existence of which can hardly be realised from below; both the glacier and the alp are called Wild Elsigen, and have seldom, if ever, been visited by strangers. Sheep used formerly to be taken there to pasture, but so many came to an untimely end by falling over the precipice into the Gasterenthal, that a few goats are now the only animals driven up there in summer.

In 1879 I had taken a careful look with the telescope at this side of the Balmhorn from the summit of the Gross Doldenhorn, and thinking the ascent feasible from the Gasterenthal, I promised to employ Johann Ogi of Frutigen and Gilgian Ogi (Sohn) of Kandersteg for the expedition, should I ever attempt it. They told me that Wild Elsigen was easily reached, and that we could find a good 'Ueberhang' under which to bivouac. Accordingly, after having torn myself away from the dissipation and luxury of Mürren, I crossed the Schilthorn to Frutigen, and after waiting at Kandersteg several days for fine weather, on September 1 I started with the two above-named guides and with old Fritz Ogi as porter. The latter was out of employment, and consequently glad to come as porter; but had I not previously engaged the others I should certainly have taken him as leading guide.

While proceeding up the Gasterenthal, we were met by a herdsman, who inquired where we were going, and on Fritz telling him that Wild Elsigen was our destination for the night, and the summit of the Balmhorn for the morrow, he shook his head and remarked, 'That we all know to be an impossibility, but the reason of your going to Wild Elsigen is obvious. To-day is the 1st of September and the chamois hunting is open; you have heard of that chamois with a broken leg, who has been seen there for some weeks past, and you are going to try and catch him. Well! I wish you good luck and "glückliche Reise."'

After about half an hour's walk up the left bank of the Kander, we commenced to ascend the rocks on the south side of the Gasterenthal. From below it seems almost impossible

that there should be a way up this great wall of rock, and indeed I very much doubt whether the way would be found without local knowledge. A faint track leads up from the valley through heather and rhododendrons for some little distance, and then for a short way farther a sort of path has been built up by woodcutters, by means of felled trees fixed into the rocks; this soon ends, and then a real climb follows, sometimes up good rocks with firm hand and foot hold, and sometimes over smooth ones with scarcely any hold at all. From the time the path comes to an end till the top of the precipice is reached, one looks down into the Gastereuthal, where a slip would soon send one, with few, if any, bumps or stoppages on the way; on the smooth rocks one wishes to be possessed of the feet of flies, and sailors would say that it was a case of holding on with one's eyelids. For the first time in my mountaineering experience did I see a guide discard his boots and prefer his stockings to climb in; this Fritz did on these smooth rocks, as he was rather heavily laden, and said he felt more secure without his boots than with them. I insisted on being roped, but I have since doubted whether it would have been of any use in case of a slip, though it undoubtedly gave more confidence. This part of the ascent may be compared with the way to the Gleckstein from the upper Grindelwald glacier, though the steps cut in the rock on that well-known path have no counterpart here and the route to Wild Elsägen is steeper.

Four hours and a half from the 'Bear' at Kandersteg brought us to Wild Elsägen, and we took up our quarters in the 'Ueberhang,' situated under a huge mass of almost perpendicular rock on the left bank of the Wild Elsägen glacier. This spot proved to be the night quarters of the dozen or more goats which had been taken up to the pasture, and the indignation of these animals at being turned out into the cold showed itself by the frequent attacks they made during the night to regain their bed, and by their utter disregard both for stones and execrations. The goats are not brought up from the valley by the way we came, but round from the Lötsch Pass side, from which there is a much easier route to Wild Elsägen, but of course from Kandersteg this way would be a considerable *détour*. The elevation of our sleeping place was only about 6,000 feet; consequently there was plenty of firewood at hand, and also rhododendrons with which to make a softer bed than the bare ground affords.

The weather was lovely and warm, so that with the exception of the goat nuisance a comfortable night was passed, and at daylight (4.30) the following day we started for our peak,

leaving Fritz to return by the Lötsch Pass route. He subsequently chose an elevated position, from which he watched our upward movements for a long time, and finally reported at Kandersteg that our success was certain. Crossing below the glacier, over avalanche *débris* and moraine, we took to the large moraine on the right bank of the glacier and followed it almost to the base of the rocky cliff, round which the glacier flows into the basin of Wild Elsigen.

The ascent to the upper snow-fields by the glacier was pronounced impracticable by all, owing to its maze of crevasses and huge séracs; so, keeping to the left, we made for a small *glacier remanié* lying at the base of the rocks between the Wild Elsigen glacier and the northern arête of the Balmhorn. Up these rocks we determined to try and force our way, and we soon found a snow couloir, now frozen hard, leading up from the small glacier. This couloir was unpleasantly furrowed down its centre by avalanche tracks, and had the snow been in a soft condition it would have been folly to ascend by this route. The rope was now put on, Johann leading, then Gilgian, and myself last, and this was our order throughout the entire day. After cutting our way up the couloir for some distance, we took to the rocks on its left edge, and finding a convenient spot, we halted for half an hour for breakfast at 6.46. Whilst engaged in this pleasant yet necessary repast, we saw an immense ice-avalanche tear down from the Altels on to the Wild Elsigen glacier and continue its course to below our sleeping place.

Proceeding again, sometimes by the rocks and sometimes by steep snow, we found no difficulties till we reached a frozen snow-slope descending from a wall of rock, which, from below, had appeared likely to be our chief obstacle during the ascent. We cut steps up this slope and skirted the base of the rock wall in the direction of the northern arête of the mountain for some little way, seeking a means of ascending it. The two guides had turned a sharp corner, and I was about to follow, when, resting my hand on a large piece of rock, I found it about to give way; how I escaped being smashed to pieces by it I do not know, but I believe that I arrested its immediate fall by pressing my shoulder against it with all my might, and by making a frantic spring towards the corner. The piece of rock thundered down the slope, and by the time it had reached our breakfasting place had started a very considerable avalanche. A fragment had caught my wrist and raised a bump there which did not disappear for many weeks. Once round this corner, we found a most convenient *cheminée*, narrow

enough to admit of sidling up it with back and feet, which landed us on another steep snow-slope, on which the snow was very soft. Above this we reached some very rotten rocks, which took a good deal of time and care to ascend, but they were not of any great height, and when once fairly over them, we saw that our difficulties were at an end. From this point a snow ridge led up to the summit, and, the snow being in first-rate condition, we pushed on and reached our destination at 1.20 P.M. The climb had been a long one, considering the height of the peak, and the fact that we had only halted for 40 mins. on the way; many steps had to be cut, as the lower part of the mountain was frozen quite hard, and much time was spent in finding the best route up, so that, should anyone follow in our steps, the time taken will doubtless be much less. Had the snow not been in good order, the risk from avalanches at the commencement of the ascent might have been great, but I think by keeping nearer to the northern arête this danger might be avoided.

A pleasant half-hour spent on the well-known summit, and then a race down to Kandersteg by the usual route, concluded our day's work, 3 hrs. 40 mins. sufficing to bring us back to the Bear Inn, which we reached at 5.40 P.M.

Before leaving the Balmhorn, I may mention that in 1874, accompanied by Peter Lauener of Lauterbrunnen and Jaggi of An der Lenk, I crossed the mountain from Schwarnbach to Ried in the Lötschthal. Returning from the summit for a short distance along the ridge by which we had ascended, we cut away a piece of the cornice and descended by the rocks to the Fluh glacier, a little way below the highest part of the pass, on the Leukerbad side. We found the rocks very difficult, and it was only after much time spent in finding a way down the lower rocks that we succeeded in reaching the glacier. The absence of much snow or ice, as it was late in the season, may perhaps account for our success in forcing a route which Messrs. T. Brooksbank and Beard were unable to repeat the following summer.*

There are many pleasant excursions to be made around Kandersteg, and I am astonished that this spot should not be more visited by mountaineers in consequence. Among others, the ascent of the Doldenhörner has been much talked of as difficult and dangerous; I think it a laborious 'grind,' but fail completely in finding the danger. Dr. Moseley and myself found the arête leading from the Gross Doldenhorn to the

* 'Alpine Journal,' vol. vii. p. 441.

Klein Doldenhorn very unpleasant, owing to the rocks composing it, but otherwise found few difficulties.

I have spent much time in the Kander valley, so that I have very pleasant reminiscences of it, and from joining the natives in their dancing, shooting, &c., I have got to be well known there. The horror of cold water among the inhabitants is as great as elsewhere away from home, and a curious instance of the same once came under my notice. I was once exploring the Schwarzbach, the stream that descends from the Gemmi into the Gasterenthal, and in one place I found it issuing from a narrow gorge apparently closed at the top. It was a warm day and a bathe did not seem amiss, so taking off my clothes, and armed with my ice-axe, I proceeded to wade up the stream, and soon disappeared from Gilgian Ogi, who I left in charge of my effects. After a certain amount of scrambling and wading I reached a large opening in the interior of the mountain, into which the stream fell from above in a lovely waterfall, which caused me to linger for some time in admiration. On returning to the mouth of the gorge I found Ogi preparing to return to Kandersteg with my belongings, having given me up for lost, his notion of cold water being that immersion in it meant certain death. A few days later the 'Thuner Tagblatt' contained a paragraph stating that an Englishman, weary of life, had attempted to destroy himself in the Schwarzbach, but had failed in the attempt.

In spite of this local hatred of cold water, however, I am glad to say that good and refreshing tubs are to be found at the Bear at Kandersteg, where the landlord, Herr Egger, takes great pains to make mountaineers and other visitors comfortable.

AN ASCENT OF THE JUNGFRAU FROM THE WENGERN ALP WITHOUT GUIDES. By CHARLES PILKINGTON.
(Read before the Alpine Club, January 31, 1882.)

TOWARDS the end of last July our party, consisting of two ladies, Gardiner, my brother Lawrence, and myself, arrived at the Hôtel de l'Ours at Grindelwald, where we received the warmest of welcomes from our old friends, the brothers Boss. Our intention was to go on to the Wengern Alp, and from there cross the Bernese chain to the Aletsch Glacier, if possible, by going over the Jungfrau.

The weather was unsettled, and a quantity of fresh snow was on the peaks, as three of us had found out to our cost whilst crossing the Wetterhorn the day before. Snow fell

again. So we spent the next few days playing with Boss's monkey, taking short walks, and talking with our old guide, Peter Kaufmann, about the mountains and the weather. The latter, he said, was only 'half and half.' We also asked if he knew what the western side of the Jungfrau was like this year. He said it would go perhaps, and that a Lauterbrunnen guide, with two others from the district, had made the ascent a few weeks before. This party had been benighted on the Silberlücke, where they spent a miserable night without food or covering, next day reaching the summit, and descending to Grindelwald half starved. He did not add that, had they been as ill-provided with drink as they were with food, all might have gone well with them. We were rather impressed with the story, which made us inclined to accept Peter's recommendation to wait a little longer until the long snow-slope of the Mönch was safe and then try that instead.

On the 27th the weather improved, and the 28th was thoroughly hot and fine. Another beautiful day followed, and the rocks of the Wetterhorn looked black again; so on the 29th we started for the Wengern Alp. Peter, having sunk his dignity as guide, consented to follow us and act as porter to the Guggi hut in the evening. It was blazing hot going up the narrow path from the valley, but we perspired cheerfully, knowing that the Mönch and Jungfrau felt it even more than we did.

Just before we reached the alder wood above the meadows we had the good fortune to meet Messrs. Moore and Walker, who had had their last climb for the season, and were starting at once for England. After telling each other our adventures, we asked them their opinion as to the ascents of the Mönch and Jungfrau. They referred us to Melchior Anderegg, who was just behind; so whilst the others finished their talk, I sounded Melchior. He thought that the Jungfrau might go all right, but that as the new snow was not yet fast enough on the old, the step-cutting on the long slope of the Mönch would take too much time. 'How long?' 'About a week, I should think,' was his answer. That settled the question. He had just been looking at the mountains, it agreed with our own opinion, and more than all the ascent of the Jungfrau was what we wished, and what we had arranged in England to do. So bidding our friends good-bye, we trudged on to the top of the pass.

It was not yet feeding time at the inn when we got there, so we took the opportunity to have a good look at the face of the Jungfrau. It is needless to describe in detail a scene so familiar to most of my readers as the splendid mountain

wall above the Wengern Alp. The great line of ice cliffs of the Guggi Glacier looked as impracticable as ever, but with the aid of the telescope we discovered two breaks in it, that on the right looking the more promising. The other doubtful points of the route were practically out of sight, though what little we could see of the ice fall of the Giessen Glacier looked anything but pleasant.

We questioned the wood carver who lives at the hotel about the state of the glaciers, as he had been one of the three who had spent the night out on the Silberlücke, but we could make nothing much out of him. Gardiner in the meantime was arranging about provisions, and, as far as possible, engaging the Guggi hut by letting the landlord know that we were going there, so that it would be full that evening. On being asked by Seiler about our guides, he had to admit that we had none. This was told to the wood carver, who we now thought regarded us with great contempt, and put us down as fools.

We finished our preparations about three o'clock, and set out across the meadows, bidding good-bye to the ladies at the moraine of the Eiger Glacier. The glacier has shrunk so much that we were able to pass over the smooth rocks below the ice, but we had to jump across the stream, which was especially awkward for Peter with his heavy load. We reached the hut in good time, and Gardiner, Lawrence, and Peter at once busied themselves in arranging it and lighting the fire, whilst I went off to look for a way on to the glacier in order to save time in the morning.

The top of the rock just above the hut is the best point for a view, and I soon fixed on a place a little below the hut. Descending to this, I set to work at once, cutting up an edge of ice, and in a quarter of an hour was on the top of a sérac, but separated from the rest of the glacier by some awkward-looking ice. Peter now came, and started cutting some distance lower down, but gave it up after a little, and went to look for another spot. He asked me if my place would go, as his would not. I said 'Yes, but it is not good,' so he went to a steep sérac a little higher up, and commenced cutting again. I then had another look round, and came to the conclusion that Peter's sérac would go, and that I should be better employed at the hut. My instincts, too, told me that the soup would be nearly cooked. When I got there everything was ready, and I found that the others had, in a moment of forgetfulness, changed their shirts in full view of the telescope at the inn below.

Just as we were finishing our meal we saw near the end of the Eiger Glacier three persons, one of whom seemed to be a lady. They came as we had come, and we were dreadfully afraid they were on the same errand as ourselves. We are not always selfish, but the hut holds four comfortably, and the Jungfrau was one of the mountains we particularly wished not to be guided over, so I am sure you can all imagine our delight when we saw them turn back when they reached the stream. Kaufmann now came back, and we spent a jolly evening together. We watched a beautiful gloaming turn to night, and then revelled rather late, keeping it up with a small fire of chips outside, and talking over old times with Peter. At last the cold drove us in, and we passed a comfortable night, in spite of the fact that, though Peter's eyes were closed, he was not hushed in sleep, as he had forgotten to shut his mouth, a slight omission which reminded us of wakeful nights spent with him in former years.

At four o'clock next morning we had bidden him good-bye and started, the rope being put on at the hut. We had two heavy knapsacks, as we carried some extra food, in case we did not find the provisions we had ordered to be sent to meet us at the Concordia hut. We had also some extra clothing and a rather heavy india-rubber bag for sleeping in, if the worst came to the worst, and we too were benighted on the mountain. Gardiner and Lawrence carried one knapsack each, and I the wine tin. We found Kaufmann's staircase in good order, but very steep and muddy; it led us to the crest of a sérac, along which we passed on to the glacier. Making our way at once to the centre, we turned straight up, meeting with no particular difficulty.

The morning was lovely, but a thin grey haze, changing to pink as the sun lit it up, hung between the Mönch and the Eiger, and caused us many an anxious thought.

We quickly reached the steeper part of the glacier, and had a good view of the line of ice cliffs. We saw that the two breaks mentioned above were caused, as we had thought, by a large piece of the cliff having come away from the rest, the two breaks leading to one point behind it. From the break on the right (that which we had chosen for our attack), a crevassed fan-shaped mass of glacier descended steeply, evidently composed of *débris* fallen from the cliffs above; its surface was rough and lumpy in places, with here and there a freshly fallen block. Keeping straight on we attacked this about the centre, where it was roughest; but it proved more difficult than we thought, so, fearing to lose too much time in

step-cutting, we bore to the left along the edge of a crevasse, and over an easier slope, until we reached a position half way between the two breaks, when, turning to the right, we bore up once more for our gap. Steps had now constantly to be cut, but by using all the holes and rough places possible, we made way fairly well, but with ever increasing difficulty as the slope steepened. Fortunately we came across an irregular split in the ice leading up in the right direction, with a rough insecure ridge on one side of it. Cutting off the insecure ice and snow, and using the inside of the crack in places, we reached a slope above, less steep indeed, but much cut up and snow-covered. Prodding constantly in search of concealed crevasses and cutting a good many steps, we worked our way close under the detached cliff. A large shallow crevasse separated us from it, turning along the edge of which, with the ice slope leading down to the glacier on our right, we made our way for some time, until it became so insecure that we were forced to find some safer road. It was too steep on the right, so we cut steps down the side of the crevasse, and, turning along the bottom underneath the cliff, climbed out at the other end, not far from the gap itself.

As our success greatly depended on what was round the corner, we were very anxious. The slope was not steep here, but very rough, and strewn with snow-covered ice blocks of all shapes and sizes. Threading our way through these, the important corner was reached at last.

Straight in front of us rose the ice cliffs, sheer and impossible; but to our left, between the detached piece of glacier and the main line of ice cliffs, was a long gorge, some twenty yards broad, at the other end of which a promising-looking slope led up towards the plateau above. We picked our way through honeycombed ice and fallen blocks lying in every position, just covered with enough snow to hide all their insecurities, and reached the deepest part of the gorge, close under the main cliffs. Walking along it, we cut our way out at the end, and gained a footing on the slope. The higher we got the more exciting it became; the top was reached, and we turned along a ridge of snow, rising gently through the cliffs towards the snowfield above. Should we be cut off at the last moment by one of those deep wall-sided crevasses? At last we could see on to the top of the cliffs, and found, much to our relief, that the ridge, gradually broadening out, at last became part of the snowfield itself with a crevasse on each side. We went quickly along this high road, at 6.40 hung out our large square sleeping bag as a signal, for the benefit of the wood

carver and others, then spreading it on the snow, and anchoring the knapsacks and wine tin, to keep them from slipping, we sat down very contentedly to a rather cool breakfast.

The mist still floated between us and the Eiger, and the sky was slightly freckled with low fleecy clouds; but on the whole the weather looked no worse, and the undulating plain below us was coloured green and gold, as it often is on a fine morning. After a halt of thirty minutes, we packed up our traps and folded the bed up. Unfortunately, after the most scientific treatment, it was found to contain air. We pressed it and sat on it, but it was air-tight and obstinate, so it had to go into the sack, air and all, making a very clumsy, top-heavy load.

As is known to most of my readers, the snowfield on which we were standing is separated from the Giessen Glacier above by a steep wall of ice to the left, and rocks to the right; the angular end of the rocks towards the Wengern Alp being called the Schneehorn. We now started towards the rock wall, Gardiner leading, Lawrence second. Crossing the bergschrund at its foot without difficulty, we were soon kicking steps in the steep snow, where it runs in a sort of bay high into the rocks above. The slope becoming icy, we took to the steep but firm rocks on our right. The scramble up these was a pleasant change after the snow, and Gardiner soon found an empty bottle, which showed that we were near the usual track. The higher part of the wall was climbed by taking to an easy rib, which brought us to the slightly overhanging wall of snow forming the summit of the ridge. Turning to our left, we walked along underneath it, until a breach was found, through which we passed easily on to the snow on the other side. We had hit the ridge about half way between the Schneehorn, as seen from the Wengern Alp, and the higher summit nearer the Jungfrau. Walking along the crest to this higher point, we halted to reconnoitre. I know of few grander or more beautiful points of view than this, but I must leave it to your imaginations or recollections, and ask you to fix your attention with us on the ice fall of the Giessen Glacier. To make it plainer to those who have not visited this glacier, spoken of by Mr. Moore as 'one of the most secluded recesses of the high Alps,' I may say that the snowfield lies immediately under the western cliffs of the Jungfrau, being bounded on the south by the Silberhorn and Silberlücke, and on the north by the ridge on which we were standing, whilst to the west it curls over in splendid broken masses of ice, the source of those white puffs of spray which fall into the depths of the Trümleten Thal, below the Wengern Alp.

The Silberlücke was the next place upon which we felt we should be thoroughly happy; but the great line of séracs, running from the Little Silberhorn to the Jungfrau cliffs, dividing the glacier into an upper and lower snowfield, had first to be passed. Peter had told us that this ice fall was usually easiest to the right. From our point of view, the séracs there were a simple wall; the only way of getting up on that side was by going even more to the right still, and cutting up the whole length of the Little Silberhorn.

Rather to the left of the centre the fall seemed less steep than anywhere else. So we had a drink of wine, greased our faces, put on our spectacles, and descending on to the glacier, crossed it to the point chosen for our attack, where Gardiner was soon hard at work cutting up an ice slope. This took some time, but the slope gradually eased off, and we stood in snow once more. To the left this snow sloped up to the bottom of perpendicular ice cliffs, extending nearly across to the Little Silberhorn. On our right front was a large projecting gable, connected by a steep ridge with the Little Silberhorn, between which and the cliffs stretched an ice valley. Changing leaders, we climbed amongst rough ice and crevasses to its entrance. We now saw that the cliffs were much cut up and broken in the corner near the Little Silberhorn; but on coming nearer, we found that they were guarded by deep schrunds, and apparently cut off. We next made the ascent of a tall snow-covered sérac in the centre of the valley, in order to have a better view all round. There was no mistake about the way now, which was the same we had thought of on entering the valley; we must descend our sérac, climb the steep face of the gable, pass along the ridge, and gain the upper snowfield by skirting the side of the Little Silberhorn. Descending carefully with our faces to the snow, we regained the bottom of the valley, and cut steps up the gable. We could now see on to the upper snowfield. We passed along the narrow crest and gained the side of the Little Silberhorn. Cutting a few steps straight up, we reached a crevasse, running nearly level for a short distance. Turning to our left, we cut our way along its outer lip, the ice falling very steeply on our left to the valley. The crevasse now turned upwards, and was crossed by another nearly at right angles, a shaky wall being thrown up at the junction. Stepping down into our crevasse, we enlarged a hole in the lower part of the wall, and passed underneath it to the other side. The crevasse now became little more than a crack in some places, but the slope gradually eased off; so we forsook it, and kicked our

way upwards, making to the left whenever we could. Thus skirting the head of our valley, by the slope of the Little Silberhorn, and dodging a crevasse or so, we reached the upper plateau itself at 9.20.

We had now conquered the second difficulty : one more remained to be faced, and that was the passage of the bergschrund below the Silberlücke, and the short climb thence to the ridge itself. This we thought would soon be overcome; for, as we had found the bergschrund below the Schneehorn rocks easier this year than when I crossed it with Kaufmann in 1876, we hoped that the one we were approaching would follow its good example. We were wrong, however. The new snow on the upper plateau was so very soft and deep, that, during our weary trudge through it, we changed leaders more than once; the middle man even taking his turn to lead, the two others walking behind at unequal distances. The nearer we got to the Lücke, the deeper was the snow, which had evidently drifted from the mountain into this quiet hollow. We went straight at the lowest point, where the bergschrund was nearly choked with powdery snow, but we saw no means of gaining a footing on the slope above. We waded a few yards to the left, forced our way up to the schrund, waist deep in snow, and beat it down until a firm footing was made on the edge. I was then lifted, pushed, and plastered into the slope above, and there propped up with axes; but it was no good, nothing seemed to be solid, and after a few struggles I subsided into the soft snow below. We might have got up if we had kept at it, but it would have been very difficult, not to say dangerous, work, with the snow in the condition in which we found it. We went back a little to get a better view of the slope, and chose a spot some distance further to the left again, where the wall was higher, but of pure ice, mingled with rocks above, the snow having been blown off it. We again got up to the schrund, the upper lip here being about five feet above the lower. After making a good platform on the lower lip, we cut two enormous steps in the one above. They then gave me a leg up, and I got my knee into one of the steps, being propped up there with ice-axes until I could get a firm footing, and cut handholes. The slope was so steep, that whilst in the first three or four steps it was impossible to use the axe with both hands; so after another large step had been made, Lawrence was shoved up also, propped by Gardiner, whilst he in turn propped me until three or four more steps were made. We then made ourselves firm, and with a pull and a scramble Gardiner joined us on the slope.

We now heard a distant shout, and looking up saw three men on the top ridge of the Jungfrau. Soon after we heard another cry, and saw three other men on the top of the Schneehorn. We could not make out at all who these last could be, but thought they might be guides spying out the nakedness of the land; so we went at it harder than ever. It was hard work too, as the steps had to be made very large; often after cutting a fine specimen I had to step back, and cut it larger, to give room for the knees, so steep was the slope. When some twenty or thirty steps had been made we climbed straight up over some smooth rocks for a few feet; then taking to the right, we cut steps slanting upwards under a rocky pinnacle, and reached the crest of the arête some little way above the Silberlücke itself, at 11 o'clock, after an hour's hard cutting. We yelled at the men below, and sat down to lunch.

Wishing to have as little to carry as possible, and knowing now that we should not need our india-rubber bag, we folded it up and buried it under a small cairn of stones, generously leaving it for the benefit of any future benighted climbers. Unfortunately it was found a few days afterwards by Messrs. Hoare and Hulton, and one of their guides was so benighted as to carry it away with him in the middle of the day, not recognising its proper use.

We had now to reach the upper western snowfield of the Jungfrau, by climbing the arête above us. Starting again at 11.30, we turned the first pinnacle (the one under which we had cut up to the ridge) on the Roththal side; after this we went along easily enough, for the arête, though steep on both sides, seems especially built for climbing. The rocks gradually gave place to snow, and the slopes on the right became less and less steep; so we took to them, and, crossing them under a conspicuous ice cliff, gained the lower part of the upper snowfield. Here we changed leaders again, Lawrence going to the front, and Gardiner coming last. We bore to the right, up and across the field, expecting soon to be able to turn nearly straight up towards the summit. The freshly fallen snow that still clung to the mountain was powdery, the old hard and icy, so Lawrence kept straight on across it, and cut up to the south-western arête of the Jungfrau. This ridge, which immediately overhangs the Roththal glacier, is the southern boundary of the upper snowfield, as the continuation of the Silberlücke arête is the northern. Turning to the left along this ridge, up rocks and snow mingled, we thought our labours nearly over. But the higher we got, the harder

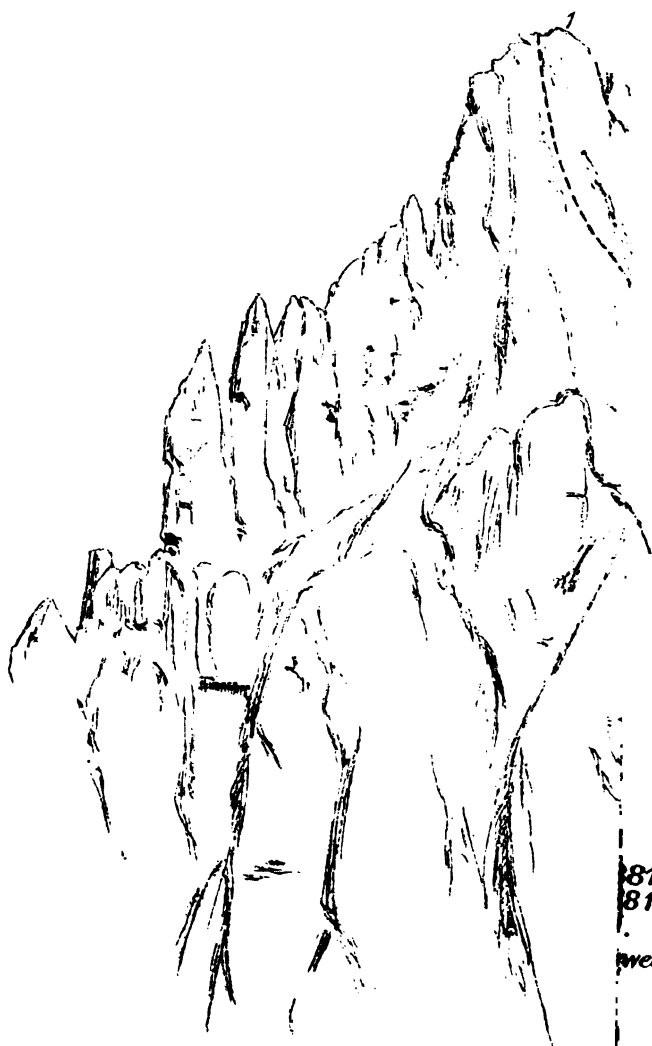
the snow became, and kicking had to be changed for cutting once more. We now bore slightly to the left, up a ridge of very hard snow, and towards the end of this Gardiner relieved Lawrence. This ridge abuts against the main arête of the mountain, and we crossed the snow to find an easy way up the final rocks. The entire lower part of the main ridge was hard ice, and on it, a short distance from us, we saw, for the first time during the day, traces of our predecessors, who had made a long staircase up it to reach some easy rocks. As the steps were old and half melted out, Gardiner chose a place to the right, where the rocks came lower down, and cutting some four or five steps, gained a footing on them and climbed straight up, reaching the top of the arête a short distance to the right of the summit. Turning along the sharp snowy crest, in a few minutes more, at 1.50, we stood on the highest point of the Jungfrau.

Very few clouds were to be seen, but the sky was hazy, and the want of sunlight, although pleasant enough on the glaciers below, now rather spoiled the colouring of the view. After having had a good look round we adjourned to a more convenient and less exposed place in the rocks below. We had been most anxious to make the ascent in reasonable time, as all the difficulties of the mountain, being due to ice and snow, are supposed to render it unsuitable for amateur climbing. We had spent less than ten hours in ascending from the hut to the top, including all halts, or 8½ actual climbing.

Having reached the summit two hours earlier than we expected, and as we were not going to the Eggischhorn, we spent a long time in our nook, eating, drinking, smoking, and talking over the climb and the view. After an hour and a quarter, however, we began to feel cold; so packing up our sacks we started downwards. We were glad of the old traces leading down the steep slope to the Roththal-Sattel, for in some places an axe had evidently been used to make them. It is useless, however, to describe a descent so well known as that of the eastern side of the Jungfrau; but I will refer you to the graphic sketches, which appeared a short time since, in one of the best illustrated newspapers. We found a splendid high road over the bergschrund below the Sattel, which, by the way, it would have been awkward to cross without the steps. It was hot enough wading through the soft snow of the upper level of the Aletsch glacier, and we found it a relief to get on to the harder part below. Nothing brings the size of this glacier home to one so much as the time it takes to descend. Even when putting a good pace on, sometimes half running,

rocks, which should have been passed long ago, refuse to be left behind; one forgets that they are really the vast buttresses of mountains, and one seems almost to be standing still. Keeping to the northern side of the glacier, we entered the sloppy plain where the glaciers from the Mönch Joch and Grünhorn Lücke join the main ice-stream. We were picking our way carefully through this morass when we came to one of the largest of the many brooks which intersect it. Knowing the rottenness of the banks, Lawrence was going gingerly to the edge, when we suggested that he should try a little more to one side; this he did, but the side gave way as he jumped, and he went in with a great splash. We of course did not try the same place, and fortunately got over all right, but Lawrence took very little interest in that. Our leader was now wet, and made short work of the rest of the swamp, splashing through everything indiscriminately, regardless of our feelings and knickerbockers, so that we were not sorry to get on to drier ice once more. As we neared the Concordia hut we became anxious about the arrival of our provisions, as it would be a great bore to go on to the Eggischhorn, only to return on the morrow. We shouted again and again, but there was no answer. We reached the rocky platform in front of the hut, dangerously strewn with broken bottles, opened the door, and found our provisions piled up in a corner all right, the appearance of the hut being still further improved by five bottles of wine standing on the window-sill. The porter had gone back, leaving the hut as he found it, in a horrid state of dirt and disorder—the pans covered with black grease, the tables with dirty paper, the floor strewn with mud, egg shells, and bits of bread, and the cups full of old coffee grounds and other nastinesses; and it was only after an hour's scrubbing and cleaning that we were able to sit down in comfort. The party or parties who spent the night of the 28th there were responsible for this state of things, and, according to the rules of the Swiss Alpine Club, are liable, I believe, to a fine. The huts on the north-west side of the chain are kept clean and orderly, and there can be no reason why those on the Valais side should not follow their good example.

After dinner we each took a blanket and went outside to smoke and think. What a change it was after the noise and bustle of the Wengern Alp and Grindelwald, sitting up there on the rocks, above the great grey glacier, watching the shadows creeping across it, and the tints changing on the snows of the Aletschhorn!



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AIGUILLE DES CHARN

à Londres
1921

ATTEMPT ON THE AIGUILLE DES CHARMOZ. BY F. M.
AND G. W. BALFOUR.

THE Aiguille des Charmoz consists of a long ridge of rocky points, the relative height of which, as seen from Chamonix, it is not very easy to determine. Thus the axe left on one of these points last year, by Mr. Mummery, appears from the valley to be planted close to the summit, whereas in reality the whole ridge is composed of two divisions of unequal height, and Mr. Mummery's axe is placed on the highest pinnacle of the lower division. The true summit is in the further or southern division, the highest points of which are at least 100 ft. above any in the northern, although it is difficult, even from the glacier, to ascertain which of these points has the pre-eminence, the mountain forming, as we have said, a ridge or *arête*, rather than an *aiguille* proper. On July 19, 1881, we attempted the ascent of this southern portion of the ridge, and were so far successful as to attain what we believed to be the highest point, though on reaching it we found the next point on the northern side to be about eight to ten feet higher. Our guides were Johann Petrus, of Stalden, and Peter Knubel, of S. Niklaus. Starting at two o'clock from the upper châteaux of Blaitières, amply provided with extra rope, we reached the glacier about daybreak, and having ascended it to a point opposite the cleft between the two main divisions of the ridge, halted in order to make up our minds what route to adopt. The three most obvious ways were (1) up the northern *arête* from the bottom of the cleft between the two divisions; (2) up the southern *arête*; (3) along a kind of ledge running obliquely upwards from north to south. Of these the two latter appeared the most feasible. We ourselves were in favour of trying the ledge, but finding our guides united in recommending the southern *arête*, we gave way. We then continued our ascent of the glacier until we reached the col, and from there, turning to the left, made our way, partly by an ice couloir, partly by the rocks, to a point about half-way up the *arête*. Here, turning again to the left, we traversed some easy rocks until we once more joined the *arête* at a platform about 150 ft. from the summit. On this platform were painted, in large red letters, the initials C. P., which we understood to be those of a well-known Chamonix guide. The prospect was, indeed, not inviting. Immediately at our feet a cleft, some 15 ft. deep, with perpendicular sides, separated us from that part of the mountain which yet remained to be scaled. On the other side of this, the smooth face of rock, save for a small landing-place about half-way up, seemed for a height of some 50 feet to offer no foothold for the climber. For some minutes we all sat down and contemplated it in silence—the guides sensible of the difficulty of the enterprise, and we ourselves reluctant to take the responsibility of urging them to it. At last Petrus announced his willingness to proceed, and took a pull at the brandy bottle to confirm his resolution. We accordingly lowered him by means of the rope into the cleft. It was thought best he should ascend alone the whole of the 50 ft., since there was no foothold, except, perhaps, at the little landing-place already

mentioned, and a slip must have been, in any case, fatal. It was nervous work watching him from the other side of the cleft, as he slowly and painfully made his way up, clinging, not merely with hands and feet, but with his whole body, to the rock. Great was the relief when at length, after many rests, he reached a safe platform above. It was now our turn. One by one we lowered ourselves into the cleft by means of a rope attached to a rock above, and separately ascended the opposite face as far as the landing-place, receiving what assistance we could from the rope, the upper end of which was held by Petrus. The scene at the bottom of the cleft was curiously striking. The place to which we had lowered ourselves afforded standing room for hardly more than one person, and formed in fact a tiny saddle, the walls on each side of which approached so closely that in one place near above our heads a natural arch of rock was left bridging over the interval. This arch might indeed have offered a possible pathway from our platform to the other side. On the right, we looked down an abrupt descent of several thousand feet to the Mer de Glace, while on the left a scarcely less abrupt descent led to the glacier we had been lately traversing.

Arrived at the landing-place, each unroped himself in turn to allow the next man to ascend, until we all stood huddled together in one little corner, where we should have been more at ease had not the floor sloped unpleasantly towards the precipice. The next part of the ascent was even more difficult than that which we had just accomplished. It would, in fact, have been quite impossible but for a great slab of rock, partly detached from the face, and leaving a crevice into which one foot could often be securely fixed. Short as was the space to be ascended in this way, progress was very slow, owing to the great exertion required, and the consequent necessity of pausing to take breath at frequent intervals. Here, moreover, as before, we adopted the precaution of ascending one by one. At length we all reached the platform on which Petrus stood. From this point there was a good view of the ledge which we had given up in deference to our guides' opinion, and though a small part of it was concealed, it would have afforded an easier route, so far as could be seen, than the one we had taken.

Our route now turned to the left, and led up to the cleft between the two highest points. This part of the ascent presented no special difficulty. On reaching the bottom of the cleft we hesitated a little how to proceed. Looking from the glacier below, we had come to the conclusion that the southernmost of the two points was the highest. From where we now stood we felt a little more doubtful, though still inclining to the same view; the pinnacles rose so perpendicularly that it was impossible to see their actual summits. It was clear that the ascent of either pinnacle would be no easy matter; but of the two the southern appeared certainly the more feasible, and, indeed, we saw no way by which the other was possible from the side on which we were. About half-way up the face of the southern pinnacle there ran a narrow ledge, sloping somewhat downwards, but still quite practicable. The difficulty was how to get to it. The ledge was formed by a slab of granite about a foot thick, which presented to us a vertical edge rising above

the level of the horizontal part, so as to form a kind of boss or prominence. The slab was similar to that described before, that is to say, it was partially detached from the parent rock, but in this instance not sufficiently to give any hold for the foot in the crevice. After an abortive attempt to scale the vertical edge by ordinary means, it became obvious that our only chance was to attach a stone to a rope, and throw it over the raised part, in such a way that while the rope passed into the crevice, the stone, owing to its larger size, should remain fixed like a grappling iron on the further side. This, after some efforts, we succeeded in doing. Even so the ascent was trying and difficult. There now remained only about 10 ft. between us and the top, and we were still uncertain which pinnacle was the highest. The rock we had yet to climb was slightly overhanging, but by dint of assistance from below this last obstacle was also overcome. Petrus stood upon the summit, and we were mortified to learn that the other pinnacle was, after all, some 8 or 10 ft. higher.* We all followed, and found it only too true. There stood the other pinnacle a little above our heads, and though not more than 10 or 12 yds. distant, separated from us by an impassable cleft. We first proposed to alter the relative heights by erecting a stone man that should overtop the rival summit, but, in default of fragments enough for this purpose, we hurled a stone over it, and were obliged to rest content with this token of limited victory. Though, as measured by our aneroids, the difficult part of the ascent had only been 150 ft., it had taken us $2\frac{1}{2}$ hrs. to accomplish.

The rest is shortly told. We remained about three-quarters of an hour on the top, and then commenced the descent, during which we were greatly aided by the extra rope we had brought. In two hours' time we reached the platform below, and thence descended to Chamonix without further incident, save a narrow escape from a falling boulder, which careered past us down the glacier, and buried itself with a terrific thud in the snow beneath.

The following are the exact times :—

Left the châteaux . . .	2.0	A.M.	Reached the top . . .	9.0	A.M.
Reached the col . . .	5.15	"	Left the top . . .	9.45	"
Reached the platform . .	6.0	"	Reached the platform . .	11.45	"
Left the platform . . .	6.30	"	Reached the châteaux . .	2.30	P.M.

Note by the Editor.

Numerous attempts had been made before August 1881 to reach the summit of the Charmoz. Of these by far the greater number had been by way of the south-eastern ridge, on which between the years 1871 and 1876 a very considerable height (the spot where the letters 'C. P.' are painted) was attained by Messrs. Stephen (?), Dent, Maund, and other members of the Club.

The first attempt direct from the Mer de Glace was made (we believe) by Mr. Wallroth in 1873, but his experiences and those of subsequent explorers in this direction have shown the great improbability of success from this side.

In 1878 Messrs. J. W. Harley and W. E. Davidson first attained, by the

* [This was the point which was reached by Mr. Mummery on August 5, 1881, by way of the N. arête. See *A. J.* x. 357.—EDITOR.]

route afterwards followed by Mr. Mummery in his successful ascent, a point about half-way between the depression separating the two divisions of the ridge, and the point 2 of Mr. Williams' sketch; and subsequently in 1880 Messrs. F. C. Hartley, J. Eccles, and W. E. Davidson reached a still higher point on the north-western ridge, probably some 30 or 40 feet lower than the peak ascended by Mr. Mummery on August 3, 1881.

NOTES ON OLD TRACKS. BY DOUGLAS W. FRESHFIELD.

IV. *The Mountains of Dante.*

A RECENT reference to Dante in one of Mr. Ruskin's articles on 'Fiction,' in the 'Nineteenth Century,'* has led me to look back to a well-known chapter in 'Modern Painters.'† I rise from its perusal with a strong sense that Dante's feeling for Alpine scenery—in the broad and proper sense of the word Alpine—has been done injustice to. Without being tempted into one of those extravagances which employ and entertain bookworms; without endeavouring to prove—as some would endeavour to prove Shakespeare to have been an attorney's clerk or an apothecary's boy—that Dante was what his countrymen now call an 'alpinista,' it may be shown from his works that he knew and liked mountains better than Mr. Ruskin was at one time disposed to allow.‡ We find that when Dante wanted a beautiful background for stately figures, a place of sojourn worthy of poets or princes, he chose, not with the *bourgeois* Boccaccio the likeness of a Florentine garden, or a Val d'Arno olive-yard, but high ground, a mountain valley or meadow; that his references to mountains are by no means of a depreciatory nature; and, further, that, while few poets have talked of climbing so much as Dante has, none has shown so thorough a practical knowledge of the right way to set about it.

The broad assertion that Dante 'never alludes to the Alps except in bad weather or snow,' may be contradicted without going beyond Mr. Ruskin's own quotations, put before us to prove the contrary. The point of the comparison between the fogs of Purgatory and an Alpine mist, is surely not only the ugliness of the mists, but also the glorious effect of the sun bursting through them about sunset, when the plains below are already dead, and the light falls only on the mountain sides.§

* Vol. viii. p. 407.

† Vol. iii. ch. xiv. and xv.

‡ No adequate materials exist for fixing exactly the time and place of Dante's travels or sojourns in mountain districts. It is probable that he must have crossed the Alps in going or returning from Paris; he is said to have visited Germany; tradition and the commentators take him to the Castle of Paratico, near Brescia, Val Lagarina in the Trentino, where he is said to have written part of the *Commedia*, Udine, and Tolmino in Friuli. In the Apennines he spent some time in a castle among the hills of the Lunigiana behind Spezzia, a visit of which many traces may be found in the *Commedia*, and he also resided near Gubbio, in the heart of the Peninsula.

§ *Purg.* c. xvii. l. 1. 'From the Alps,' says Cary, quoting Landino, 'all high mountains are in the Tuscan language called Alps.' 'Alpe' and 'Alpone,' on the contrary, as anyone in the habit of consulting ordnance maps is aware, are common country names for the upper portions of the Tuscan Apennines,

The next quotation should have been made in the original. Compare

Al fin d'un ombra smorta
Qual sotto foglie verdi e rami negri
Sovra suoi freddi rivi l'Alpe porta *

with

Arriving at the verge
Of a dim umbrage hoar, such as is seen,
Beneath green leaves and gloomy branches, oft
To overbrow a bleak and alpine cliff.

In this (Cary's) translation, adopted by Mr. Ruskin, *hoar*, *gloomy*, *bleak*, and *cliff* are all unwarranted additions of the translator. 'Dim' is a misprint for 'dun,' Cary's word. The 'rami negri' of the original is probably a piece of local colour (an ingenious commentator might make it refer to the pines as opposed to the broad-leaved forest). It is only necessary to glance at the context to see that bleakness and gloom are equally and utterly incongruous on the 'sommo smalto' of Purgatory.†

Again, Mr. Ruskin remarks that Adam of Brescia remembers the hills of Romena 'only for the sake of their sweet waters.' The passage runs, in the original—

Li ruscelletti, che di verdi colli
Del Casentin discendon giuso in Arno,
Facendo i lor canali ‡ e freddi e molli,
Sempre mi stanno innanzi.§

for the rounded hilltops where the flocks and herds find pasturage. In this sense Alp is used by Lorenzo de' Medici (see his poem *Ambra*). 'Alp,' it should be remembered, is a word applied to the common summer pastures of mountain people, not, except by tourists and men of letters, to snowy peaks. Its etymology is disputed (see Ste. Palaye, *Diet. Hist. de l'Ancien Langage François*, Du Cange, and Grimm), but the connection with *albus*, white, i.e. snowy, must be given up. Of course I do not deny that primitive man when his ideas first began to outrun his power of utterance may possibly have given out the same sound to express both height and light. There is at any rate a poetical appropriateness about the fancy, and we may impute almost anything we like to such remote ancestors. But the namers of the Alps were a race much nearer to ourselves.

* *Purg.* c. xxxiii l. 107.

† I assume that the 'sommo smalto' of *Purg.* viii. 114, can only apply to the 'gran variazion dei freschi Mai' of the summit meadows of the Mountain of Purgatory. Mr. Ruskin, however, has either overlooked the passage or gives it a different sense, since he has devoted a page (*Modern Painters*, vol. iii. p. 228) to showing that Dante uses the word 'smalto' of the green enamel of the Poets' Meadow in another place, 'in order to emphasize the hard smooth lifelessness of the green crust covering the dark ground.' He adds that in Purgatory the word is not 'enamel' but 'herb,' which is true of another passage. Perhaps in Hell Dante thought of the substance, in Purgatory of the colours, of enamel. But even in Hell the Poets walk on a 'prato di fresca verdura.'

‡ Translators, unaware that in many mountain districts *canale* is a common term for a valley, perhaps miss the full force of the word where it means more than *channel*. Anyone who will take the trouble to turn over ordnance maps may verify my statement, and prove to himself that Mr. Ball's ingenious hypothesis, that the Venetians transferred the name from the water-streets of their own city to the valleys of the Alps, will not meet the facts.

§ *Inf.* xxx. 65.

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Surely the verdure of the hills, some of the highest Apennines, as Dante has noted elsewhere,* and their cool soft glens, form an essential part of the picture.

Once more, is it quite fair to say that Dante shows no signs of having noticed 'the whole purple range of the mountains of Carrara,' from the stairs of San Miniato?† Since we are dealing in minute criticism, I may point out that the keenest observer cannot see 'the whole range of Carrara' from that famous standpoint, and for the same reason that the Spanish fleet remained invisible. The northern summits round Carrara are out of sight, hidden by intervening Apennines. The prominent summit from Florence is the Pania della Croce, Dante's own Pietra Pana,‡ which, when he wanted the image of a bulky hill, he chose, as evidently for its familiarity to Tuscan eyes, as the remote Tabernicch for the rhyme.§

But I confess that I attach but slender importance, one way or the other, to such notices or omissions. How many generations did it take to discover Monte Rosa from Milan, Mont Blanc from Geneva? Until distant mountains get proper names and human associations they are seen, perhaps even admired; || but seen and admired only with the clouds they so closely resemble, and so often mingle with, as parts of the sunset. Of all the Alps the Viso alone, 'Vesulus the cold,' impressed itself on Virgil and Chaucer.

The passages quoted in 'Modern Painters' are of course far from being the only references to mountains in the 'Divina Commedia.' In

* *Purg.* xiv. 31.

† The statement made by Mr. Ruskin in connection with this, that Dante was 'equally regardless of the clouds in which the sun sank behind them' (the Carrara mountains), p. 249, seems to me quite as questionable. How is the assertion that Dante's 'only pleasure in the sky depends on its "white clearness"' reconcilable with *Paradiso*, xxvii. 27, the 'vapori trionfanti' of l. 71, or the gleam of sunlight through clouds, xxiii. 79?

‡ Pana and Pania, I should add, are both local expressions for a mountain, and the summits of the group are called collectively Le Panie. Cf. the Spanish Pena, our own Pens and Bens, and many other variations of the same root.

§ *Inf.* xxxii. 28. I accept provisionally—because I suppose they have some grounds for it—the commentators' identification of Tabernicch as a mountain in Hungary, though I can find no support for their assertion in geographical works. Mr. J. A. Carlyle somewhat cautiously says that Tabernicch is the name of a district containing a mountain, and a village called Tovarnich is found near the Lower Save in atlases. The only *Tabernus* known to Boccaccio (*De Montibus et Sylvis*, &c.) is Virgil's Taburnus in Southern Italy. Massa was anciently Ad Taburnas Frigidus; the mountain behind, now Monte Tambura, may have been Mons Tabernicus. There is also an Avernich Kofel above the Predil Pass, near Tarvis, on the ancient amber route from the Baltic. Signor Giuliani, of Florence, whom I have consulted, refers to a mountain near Adelsberg, known in the Middle Ages as Tavorney. But, he justly adds, no identification of the least certainty has yet been produced.

|| Thus Claudian, *Fescennina in Nuptias Honorii et Mariae*—

'Veneti favete montes,
Subitque se rosetis
Vestiat Alpinus apex,
Et rubeant pruinæ.'

the first canto the poet is discovered attempting the ascent of a mountain—a 'bel monte' it is presently called. Virgil's first question to him is—

Percchè non sali il diletto monte,
Ch' è principio e cagion di tutta gioia? *

Dante speaks of the Cretan Ida as 'lieta d' acque e di fronde' and of the mountains of the Giudicaria as abounding in water. † He seems often to have thought of mountains in this way, with a lively sense of the beauty of their streams and forests.

I hope further to show that Dante had a keen eye for the picturesque incidents of mountain travel, and some appreciation of its pleasures as well as of its difficulties and hardships.

The following passages could hardly, I think, have been written by a confirmed hill-hater, such as Mr. Ruskin pictures to us.

'The first ('Purg.' xxvii.) is too long for quotation entire. Dante and his escort are benighted, and lie down on ledges of the mountain, the nature of which takes away 'La possa del salir più che il *diletto*.' Here they take their rest among the rocks, quiet as goats who, having eaten their fill, lie watched by the shepherd. From their groat

Poco potea parer li del di fuori,
Ma per quel poco vedev' io le stelle
Di lor solere e più chiare e maggiori.

All true mountaineers will recognise the truth of the last touch—and of these, 'Then we both sat down, turning towards the east, whence we had climbed, since to look back pleases everyone.' ‡

Again—

Com' uom che torna alla smarrita strada
Che infino ad essa li par ire invano. §

Of how many Italian Alps is this a true outline?—

Questa montagna è tale,
Che sempre il comminciar di sotto è grave,
E quant' uom più va sù e men fa male. ||

I have quoted in a previous number (p. 72) one of Dante's numerous descriptions of mountain meadows. One cannot but be reminded by these pictures of great flower-fields, of hidden valleys raised on high mountain sides, or tops, and approached by steep cornice paths, of the country behind Verona and Bassano, of climbs to the Sette Comuni, or out of the Adige valley to the uplands of Molveno. This region surely—not the Apennines—is the source of the scenery of Purgatory. Dante's rock landscapes seem to me to come from the same part of the Alps. His crags are limestone with dolomitic characteristics. They must be climbed by long slopes of broken, unstable boulders, or by

* It must be noted here that Mr. Ruskin, who is a versatile, as well as a subtle and most plausible advocate, and does not mind holding a brief occasionally against his former self, has elsewhere, when they did not stand in the way of his argument, given to these passages their natural import. See *Modern Painters*, vol. iii. p. 217.

† *Inf.* xiii. 97; xx. 64.

‡ *Purg.* iv. 52.

§ *Ibid.* i. 119.

|| *Ibid.* iv. 88.

chimneys which constantly bend and shift. When not grey, their general tone, they have a 'color ferrigno.' 'What Dante first fixes on is their frangibility;' they are treacherous, and the climber must test before he trusts each handhold.

There is something not a little ridiculous in seriously discussing Dante's climbing powers at all, much more in deducing them from the action of the Dante of the poem! We do not generally deny Bunyan a fair share of pluck because his Pilgrim 'suddenly made a stand when he beheld the hill, and how it hung over the way.' It is Mr. Ruskin, however, who has posed the question by declaring that 'by many expressions throughout the poem Dante shows himself to have been a notably bad climber.' Any Alpine Club jury would, I am confident, reverse this verdict on the strength of the following passage alone:—

'When we had reached the broken ridge, the guide turned to me with that pleasant look which I had noticed before at the foot of the mountain, and after having first by a thorough inspection of the broken crag settled on some plan in his own mind, he stretched out his arms and took hold of me. Then, with the air of a man who, while intent on the work in hand, keeps an eye to the future, seeming always to be looking forward, so lifting me up on to the top of one big boulder, he looked out for another jag, saying "Get well hold of that one next, but first make sure it will bear you." Presently Dante gets out of breath, but though the ground is 'craggy, narrow, and difficult, and a good deal steeper than what had gone before,' he 'goes along talking, so as not to appear nervous.' *

Again, when Dante wants to give an idea of the steepness of the Mountain of Purgatory, he does not imagine an impossible angle, or, like modern writers, talk loosely of the 'perpendicular,' but quietly says that the slope was rather more than 45°, a fact impressive to climbers, who know that this is about the steepest that can conveniently be climbed, but to them alone.†

I feel no authority to say positively (as Professor Friedländer does‡) that Dante loved to climb mountains. But surely these passages—and more of the same character may be easily found §—which read like a modern description of an Almer or Devouassoud at work, show at least that when there was any need he knew how to climb. I hold to Mr. Stephen's theory that by their books we personally know men, and it is to me impossible to believe that any of Dante's writing came from a man who was never so happy as when 'sitting in the sun' or 'walking in a dignified manner on flat pavement in a long robe,' as Mr. Ruskin puts it.

The conclusion fairly to be drawn from Dante's writings is that the poet was, not somewhat behind, but considerably in advance, of his age in his feeling for nature; that in so far as mountains were well-watered and wooded, or spread out into broad flower-meadows, he loved

* *Inf.* c. xxiv.

† *Purg.* iv. 41.

‡ *Ueber die Entstehung und Entwicklung des Gefühls für das Romantische in der Natur.* Leipzig, 1873.

§ If more are wanted, consult *Purgatorio*, cantos iii. iv. and x.

them; and that he was, like Lionardo da Vinci (in his sketches), keen to note the characteristic features of their sterner landscapes, even where he no longer cared to dwell on them. The modern mountaineer will not readily give up his claim to a special bond of sympathy between himself and the poet who had such a taste and talent for exact topographical description, such a love of space, sunrises, and clear wide skies; who, whether by the aid of experience or intuition, has described so well and closely the incidents of mountain travel as we know it, of rock-climbing as we practise it.

NEW EXPEDITIONS—(continued).

Mont Blanc District.

DÔME DE ROCHFORT (3,997 mètres = 13,114 feet). *August 12.*—Mr. J. Eccles, with Michel and Alphonse Payot, after bivouacking near the Capucin rock on the Glacier de Leschaux, started about 4.30 A.M., and in 1 hr. 15 min. reached the bergschrund, which runs from the Mont Mallet along the base of this chain. In 1873 it was impracticable, but in 1881 was much smaller, and was easily crossed. After it, a moderately steep ice-slope led in about half an hour to the base of the rocks, whence an easy climb led at 7.30 A.M. to the summit, of which this was the first ascent.

Monte Rosa District.

ROSSBODENHORN (3,917 mètres = 12,794 feet). *July 11.*—The same party made what is believed to be a new route up the peak. Starting from the Rossboden châteaux at 3.15 A.M., they kept along the same side of the glacier for $\frac{3}{4}$ hr., then crossed it to the base of a spur which falls from the ridge separating the Bodmer and Rossboden Glaciers. Mounting along the left side of this spur for about 1 hr. 30 min., they then took to its crest (crossing for a short time to the right-hand side), and thus reached the summit at 10.25 A.M. The line of ascent is well seen from the road between Simplen and the Hospice.

TÊTE DU LION FROM THE NORTH. *August 7.*—Mr. J. H. Wicks, with Ambrose Supersax and Theodor Andermatten, starting from the Stockje hut, crossed the Tiefenmatten glacier to the foot of the great couloir leading up to the Col du Lion (2 hrs.), and having cut up an ice wall exposed to falling stones, took to the rocks on the (proper) left of the couloir (*i.e.* the Dent d'Hérens side), and mounted direct to the summit, the final ridge being struck about 100 yards west of the actual peak. The descent was made to the Col du Lion in $\frac{3}{4}$ hr. From the foot of the couloir to the top of the peak the party employed $7\frac{1}{2}$ hrs. They consider the expedition dangerous and difficult, owing to the insecure nature of the rocks and to the falling stones, though the latter are for the most part confined to the couloir itself.

We may note here that the *Verstanklahorn* (3,302 mètres = 10,834 feet) in the Silvretta district, which enjoys a very high reputation for

difficulty, was ascended on August 20 from Vereina (previous ascents—two or three in number only—having been made by a very roundabout way from the Silvretta Club hut) by the guides Guler and Schlegel, of Klosters. Four days later Guler led Herr Geisler, of the German A. C. (who had been left behind at the foot of the peak on the 20th, owing to bad weather), to the summit. The climb is described as difficult and dangerous, lying through a steep snow couloir and then over the rocks to the left. Two hours were required for the ascent from the *Bergschrund* and $2\frac{1}{2}$ for the descent.

The central and highest peak of the *Levanna* (3,640 mètres = 11,943 feet) in the Graian Alps has been climbed direct from Ceresole (i.e. from the north) by way of the rocky ridge, falling immediately from the summit. This was first done on August 10 last by Signor Simonetti, the Italian engineer charged with the new survey of the district, led by a local man, Blanchetti, and again on August 12 by the four Signori Sella, with Maquignaz and Bich. The latter party, who describe the ascent as not easy, took 8 hours (including halts) from the *Levanna* Alp to the top.

REVIEWS AND NOTICES.

Relazione sulle condizioni geologiche del versante destro della valle della Dora Riparia tra Chiomonte e Salbertrand. Del dottore Martino Baretta. (Turin: Camilla e Bertolero, 1881.)

This pamphlet is also connected with railway geology, as it arises from an investigation made by Dr. Baretta into the petrology and stratigraphy of the beds traversed by the railway from Modane to Turin, between Chiomonte and Salbertrand. The line was much injured by falls of rock last May, and there appeared a probability of others, so that Dr. Baretta was instructed to examine the geology of the district with a view of seeing how far these were due to the nature of the rocks. To this the second part of his pamphlet is devoted, from which it appears that in his opinion a portion of the line is highly unsafe, owing to the geological conditions, that all attempts at repair will be very costly and of dubious stability, and that (as we infer) some change in its course is necessary. To this report a brief sketch of the geology of the surrounding district is prefixed, which is of more general interest. From this it appears that three great formations may be recognised—the lowest, called the *Ancient* or *Central gneiss*—a formation consisting almost wholly of a granitoid gneiss, rich in porphyritic crystals of felspar; the next, or *Pietre verdi* zone, consisting of serpentinous and horn-blendic schists, opicalcite and crystalline marble, with gneiss and mica-schist rich in nodules of quartz; and lastly a group locally called *pietra marcia*, consisting of less crystalline rocks, limestone, gypsum, quartzites, and schists. The three appear to be unconformable, though, as we infer, the unconformity is not very strongly marked, and it is in the uppermost of these that the dangerous spots occur.

T. G. B.

Aperçu géologique sur la chaîne du Mont Blanc en rapport avec le trajet probable d'un tunnel pour une nouvelle ligne de chemin de fer. Par le docteur Martin Barette. (Turin: Candeletti, 1881. 2 francs.)

The construction of a railway to Chamonix was popularly reported to have been one of the attractions held out to the natives of that district as an inducement to consent to transference from Italian to French rule. This hope has hitherto been unfulfilled, but now the idea is seriously entertained, not only of effecting this, but also of constructing another Franco-Italian railway and piercing the main chain of the Alps. At present, however, there seem to be rival schemes—one to utilise the railway already constructed and make a tunnel beneath the Simplon Pass; the other, to which this memoir relates, to follow the valleys of the Arve and of Aosta. The geology of the Mont Blanc chain has already been admirably described in the classic work of M. Favre, but Dr. Barette has now examined a portion in greater detail, and published his results in the present memoir, which is illustrated by a map and sections. The proposed tunnel beneath the main chain would be 13,100 mètres long, and would run nearly in a direction from south-east to north-west. It would pass almost beneath the Mont Fréty, under the summits of the Tour Ronde, and the Mont Blanc du Tacul, to the north of the Grands Mulets, and almost under the right margin of the Glacier de Tacconnaz. The petrographical character of the rocks to be traversed, both here and in the approaches to the tunnel, is described, and numerous valuable notes as to their dip and strike are recorded. These appear to indicate a general conformity between the protogine, forming the central part of the chain of Mont Blanc, the overlying schists, and the slates and limestones. This at first sight certainly seemed to favour the idea that they form a continuous series. A closer examination, however, of the published sections shows that this is hardly possible, and that there must be important faults, of which no indication is given. Still, although this memoir fails to throw much light upon one of the most important problems in modern geology, viz. the relations one to another of the various more or less metamorphosed rocks and their respective ages, it contains information which will be of much use when the complete discussion of this problem is undertaken.—T. G. B.

Scritti Varii di Argomento attenente all' Alpinismo. Anno IV. (Florence: Niccolai.)

Guida della Val di Bisenzio (Appennino di Montepiano). Da Emilio Bertini. (Prato: Lici.)

Guida illustrata del Casentino. Da Carlo Beni. (Florence: Niccolai.)

The Florentine section of the Italian Alpine Club (though numbering only 192 members) is one of the most flourishing branches of that prosperous society, and we have another proof of its activity in the fourth volume of 'Scritti Varii,' which has been lately published. The actual condition of the section is set forth in a very interesting speech of the president, Mr. R. H. Budden, an honorary member of our own club and a gentleman known far and wide for the intense interest he takes in all Alpine matters, and the courtesy and readiness with

which he communicates his knowledge. Then we have an article by the lamented Signor D. Marinelli on ascents of Piz Zupo, the Marmolata, and the Glockner. Count Thomas de Cambray-Digny narrates his experiences on the Pelvoux and the Viso in a pleasantly written paper. The other articles relate for the most part to the Tuscan Apennines, and should be consulted by anyone wishing to plan rambles in that district. This patriotic attempt to open up the hilly portions of its own territory is a leading characteristic of the Florentine section, and, to foreigners at least, is chiefly evidenced by the number of local handbooks published more or less directly under its auspices. Among these are the works by Signori Bertini and Beni, mentioned at the head of this notice, both excellent specimens of the series to which they belong. Of the two, that by Signor Bertini, is perhaps made up to a larger extent of useful practical details; while Signor Beni's book is, from the nature of its subject, largely historical, and is illustrated by some lithographs, the effect of which is very pleasing, though they have at first sight a rather rough appearance.

Annuario della Sezione Lucana, 1878-1880. (Potenza.)

Here again we find a section of the Italian Club doing good work, and publishing its labours in a modest but very interesting volume. It was founded in 1878, and now appears before the world for the first time with its Annual, which we trust may be the first of a long series. This contains many articles relating to the Basilicata, the mere names of which would take up a larger space than we can afford. But there are also some articles of more general interest, from one of which we learn (pp. 264-6) that there exist at present no less than 39 distinct societies, which busy themselves with the mountains of their own or other lands—surely the best proof possible that the love of mountain scenery is still on the increase, despite all detractors.

Historique de la Vallée d'Aoste. Par J. B. Tillier, Secrétaire des Etats du Duché d'Aoste. (Aoste: Mensio. 2 francs.)

This is an edition (rearranged and thrown into a readable form by Canon Berard of Aosta, who has already deserved so well of his native valley) of that part of a seventeenth-century work by an Aostan which is concerned with the political administration of the duchy. It is of the highest historical value, and enables us to realise the almost independent position of Aosta with reference to the counts and dukes of Savoy. We trust that the present pamphlet will meet with sufficient recognition to justify the publisher and editor in reprinting the whole work of which this is a detached fragment. Few Alpine valleys have had so interesting a history as that of Aosta, and there are fewer still of which the natives have been inspired by local patriotism to treat their history in fitting detail. While writing of Aosta, we may draw attention to the interesting account of the passes in the Duchy of Aosta used in the seventeenth century, published by Signor L. Vaccarone in No. 46 of the '*Bollettino del Club Alpino Italiano*' from old documents, and forming a sort of supplement to his former paper on the traces of former roads across the main chain of the Western Alps.

Alps and Sanctuaries of Piedmont and the Canton Ticino. By Samuel Butler.
(London: Bogue, 1882. 21s.)

Mr. Butler's book is, strictly speaking, a contribution to sub-Alpine rather than to Alpine literature. This will be shown by a sketch of the ground he covers. His first halting place is Faido, on the St. Gothard, a neighbourhood the beauty of which long ago attracted Turner and his interpreter Mr. Ruskin. He describes visits to Fusio in Val Lavizzara, to Val Mesocco, to Locarno, to the hills about Varese and Arona, to the resorts of Piedmontese society in the Valli di Lanzo, to the Sagro di San Michele above the entrance to the valley of Susa, and to the pilgrimage shrines of Oropa and Graglia, near Biella.

His 'alps' are the alps of the country, the high pastures, not the snowy alps of tourists, geographers, and poets. His 'sanctuaries' are village churches or solitary chapels, as well as the more famous resorts of pilgrimage. The descriptions of the curious remains of art and architecture to be found by wanderers in out-of-the-way villages and on remote heights are the best part of the book. Mr. Butler writes well, and despite his many digressions shows a real sympathy for the matter in hand. Had he chosen he might have made a permanently valuable addition to literature. He has preferred to treat his subject in the desultory and discursive spirit of the holiday-maker, and his pages, therefore, though they will give pleasure to those who look only for the lively letterpress of an 'illustrated book,' are disappointing to readers interested enough to hope for something better.

It is hardly possible to describe the hill-country of North Italy without drawing many delightful pictures, and Mr. Butler's pen is a lively aid to his pencil in bringing before us mountain shrines and chestnut-draped slopes. But in his descriptions of the scenery of Canton Ticino he seems to us to miss the point so completely as almost to raise the suspicion that he is treating his readers to one of the paradoxes which are still dear to the author of 'Erewhon.' The exquisite valleys which meet at Locarno are unrivalled in the Alps for the purity and colour of their streams, for the way they exhibit in inexhaustible variety of combinations the architecture and foliage of the south thrown over mountain spurs and buttresses, which combine the rude strength of the central range with the harmonious outlines of Italian hills. But they have been denied one thing—a diadem of snowy peaks. It follows that the landscapes of the upper glens, above the crags and forests, are comparatively tame. To the lower gorges of Val Anzasca Monte Rosa is but a crowning splendour. But what would Macugnaga be without it? Yet it is not to Bignasco, but to Fusio and the glens behind it, that Mr. Butler is attracted. A quiet pasture valley with uniform slopes is a pretty thing in its way, but to fall down and worship it in the Italian Alps shows a taste which will not find many sympathisers. It is a disappointment to find that Ré, the pilgrimage shrine of the Val Centovalli, is not included in Mr. Butler's list. There (in exception to the general rule laid down above) the landscape is crowned by a superb view of the peaks of Monte Rosa. A lake nearly a mile long has been formed below it by a recent landlip. Of this catastrophe Mr. Butler makes no mention. Nor is he happy in his allusions to the two principal mountains of the

district, spelling Basordine throughout for Basodine, and boldly declaring that Piz Campo Tencia has no name on the Ordnance map. Of the 'Alpine Guide' he has apparently never heard. Indeed of Alpine literature in general Mr. Butler seems to know nothing, beyond Bädeler. It is a pity, for the 'Guida alle Alpi Occidentali,' published by the Turin Section of the Italian Alpine Club, might have directed him to some curious survivals of the ancient customs and ceremonies in which he takes an interest.

Mr. Butler tells us that in Val Anzasca he bought some tobacco rolled up in the business accounts of a local tanner for the year 1797. Among the skins received, and between chamois and marmot, are mentioned 'goats.' It would be interesting to know what is the Italian word thus translated; for it seems quite possible that this entry may be a witness to the existence of bouquetin in this part of the Pennine Alps at the end of the last century.

The illustrations are very numerous, faithful, and well executed. They are devoted rather to sanctuaries than to mountains.

D. W. F.

Annuario della Società degli Alpinisti Tridentini, vol. vii. 1880-1881.
(Rovereto, florins 1.50.)

The Trentino Society has from the commencement applied itself to the general illustration of its province, as well as to Alpine exploration. In the present volume we find, accordingly, several historical or scientific contributions, and some more legends of the Witches—for whom, as Mr. Symonds has pointed out in his recent 'History of Italian Literature,' this region had in the seventeenth century an unfortunate celebrity—while the portion devoted to mountain ascents is perhaps less important than usual.

The only *new expedition* chronicled is an ascent of the pinnacle immediately north of the Bocca di Brenta, by Signor Apollonio. This paper is illustrated by a map and panorama of the Brenta group, in which the author has done his best to put forward a new nomenclature derived from B. Nicolussi, the Molveno guide. He calls the Cima di Brenta, *Cima di Val Persé*, and his own peak the *Brenta Alta*, besides making other alterations. Most peaks have as many names as sides, and, as a general principle, it is inexpedient to unsettle a nomenclature based on the usage of the valley from which the peak is most often approached by strangers—in this instance, Val Nambino. But if the case can be made out, we see no reason to object to the northern peak being called the Cima di Val Persé. We should, however, follow Signor Apollonio with greater confidence if his map showed a more complete knowledge of the group. In the first place, he has forgotten to notice that at so long ago as 1874 a committee of his club considered the nomenclature of the Brenta chain. He has omitted five of its most important passes. He has misplaced the Cima Tosa relatively to the Crozzon di Brenta. He has contradicted, without giving any authority, a physical fact obvious, we should have thought, to anyone who has been on the two peaks, or either of them, that the Cima Tosa is loftier than the Cima di Brenta (di Val Persé).

The thanks of explorers of the Trentino Alps are due to the society for the erection of a solid hut near the Bocca di Brenta. They have two others in contemplation. We cannot help thinking small mountain inns would be a greater benefit to travellers. The châteaux in this region already supply a night shelter near enough to the peaks for most mountaineers, and the discomforts of a hut and a chalet are nearly balanced.

D. W. F.

Le Pertuis du Viso. Etude historique d'après des documents inédits du XV^{ème} siècle conservés aux Archives Nationales de Turin. Par Louis Vaccarone. (Turin : Casanova.)

Most travellers who have penetrated to the valleys lying around the foot of Monte Viso will remember having heard of a tunnel pierced in the rocky wall which cuts off Piedmont from Dauphiné, and curiosity may have led some to verify these reports by a visit to the spot. For the information of those unfamiliar with this part of the Alpine chain, it may be stated that this tunnel (now 246 feet in length and 6½ in height) lies a short distance below the summit of the Col de la Traversette, which connects Crissolo and the valley of the Po with Abriès and the valley of the Guil, a tributary of the Durance. It is thus a little to the north of the Viso, and this is the pass meant when it is asserted that Hannibal crossed the Viso. The origin of this tunnel has been attributed to Hannibal or Pompey, the Saracens in the tenth, the Dauphin Andrew in the thirteenth, or Francis I. in the sixteenth century. But it has been known for some time (Moréri, in his great 'Dictionnaire Historique,' originally published in 1673, being the first to point out the fact) that, in truth, the credit of this undertaking was due to a Marquess of Saluzzo; and as Jacques Signot (or Signot), in a pamphlet published in 1515 describing all the passages across the Alps between France and Italy, states that the tunnel had been pierced twenty-four years previously, it is clear that the Marquess Louis II. (1475-1504) was the promoter of this bold undertaking.

But we believe that we are correct in saying that, though Malacarne mentions having seen them, the original documents have not hitherto been published. Signor Vaccarone discovered them in the Turin archives put together in a packet marked *Super negotio aperturæ collis Montis Visoli*, with the date 1475, and he has now printed them entire, prefixing a valuable introduction, from which most of the details in the present notice are taken.

From these it appears that Louis II., in order to procure his people a sufficient supply of salt from Provence, of which they stood in great need for their flocks, conceived the idea of piercing the range at the head of the Po valley in order to shorten the journey and to render it practicable in summer as well as in winter. He applied, in 1475, for support to the Parlement of Grenoble, which gathered all the information it could, and the Treasurer-General of Dauphiné was sent by the Governor of the province to take evidence on the spot. But the report was not presented to the King-Dauphin (Louis XI) till the end of 1477, and then only in consequence of a letter written directly to the

King by the Marquess. The King directed the Parlement to assist the Marquess in every way, the States of Dauphiné sanctioned the scheme, and we find that in 1478 an agreement was made between the Marquess (acting for himself as well as for Louis XI. and the Parlement) and two nobles, Martin de Albano and Balthasar de Alpiasco, by which the latter engaged to undertake the conduct of the works necessary for carrying out this scheme. The details of this treaty (given by Signor Vaccarone in his Appendix No. 6) are in the highest degree curious and interesting; the Marquess agreeing to furnish 12,000 florins, all wood and iron required, and to grant the undertakers the privilege of conveying a certain amount of merchandise through the tunnel without paying any customs duties. The project was approved by the Parlement of Grenoble and by René, Count of Provence; but disagreements sprang up between the Parlement and the Marquess, which delayed its execution for some time. The Emperor Frederick III. in 1480 gave the Marquess Louis the right of levying a duty on merchandise passing through the tunnel, provided he completed it and built at the entrance a chapel in honour of Our Lady and S. Christopher, with a chaplain attached to pray for the souls of all the Emperors. As a matter of fact, the building and foundation never advanced beyond the stage of a project on paper. Louis XI. having ordered the Parlement to resume the work, the plan was finally executed in the summer of 1480, thus anticipating the Fréjus tunnel by 390 years. From that time forth we find traces of the frequent use of this tunnel. Through it passed in 1494 part of Charles VIII.'s army on the way to the conquest of Naples. Francis I. of France constructed a good path on the French side, traces of which are said to exist, but were not discovered by the writer, who twice passed through the tunnel last summer. As long as the marquessate of Saluzzo remained in the hands of the French King (1528-1588) the tunnel was left open and the paths on both sides maintained; then it was closed by the Dukes of Savoy, in order to force the salt traffic to pass through the Maurienne or the Tarentaise. Though reopened about 1600, it had become choked up with *débris* in 1627, and, despite the petitions of the inhabitants of the valleys on either side, it was not reopened till 1803 by the Napoleonic sub-prefect of Saluzzo, Mons. P. B. Bressy. After several changes, it was arranged, in 1856, that the Commune of Crissolo should keep it open, and it has been aided in carrying out this obligation by grants from the Provincial Council and the Italian Alpine Club. An iron hand-rail now runs through the gallery, which makes an awkward bend at one point and which at the end of September is already glazed with ice. In the present condition of the tunnel and its approaches beasts of burden can certainly not come near it. It would seem from the length given in the documents of 1480 that it was then half as long again as it is now. In all probability this is an exaggeration, though there is no doubt that, owing to the crumbling nature of the rock, the gallery is steadily diminishing in length, and, in fact, on the French side an artificial covered way runs for a short distance. Iron rings have been found attached to the roof, presumably in order to hold lanterns, and there are certain hollows in the sides of the tunnel,

which are supposed to have been meant to meet the case of two caravans of mules encountering each other in the midst. The mouth of the tunnel on the Italian side is now marked by splashes of red paint, seen from a considerable distance.

Without doubt this tunnel ranks as one of the chief curiosities of the Alps, and is specially remarkable as having been conceived and carried out by a local potentate with aid from his more powerful neighbours. Signor Vaccarone has again earned the thanks of those interested in Alpine history for his most interesting book, the printing and general get up of which are most luxurious.

Illustrierter Glockner-Führer. Von Josef Rabl. (Vienna: Hartleben.)

Bekleidung, Ausrüstung und Verproviantirung des Hochtouristen. Von Julius Meurer. (Vienna: Spies.)

Das Finsteraarhorn. Von Julius Meurer. (Vienna: Spies.)

These three works are all published by the 'Alpenclub Oesterreich,' a society which, though founded a very few years ago, has already taken a high rank among Alpine clubs for its enterprise and activity, and numbers at present over 1,500 members.

The guide to the Glockner district is very well done, and is in fact a monograph on the Glockner, somewhat in the style of M. Durier's book on Mont Blanc. It contains, however, in addition a great many practical details. All the latest information as to new routes, tariffs, guides, huts, &c., is given, nor are the local manners, customs, and legends passed over without notice. There are many illustrations scattered through the book, and an excellent map on a scale of $\frac{1}{25,000}$, besides a sketch map. Some interesting statistics are given as to the number of the ascents of the Glockner from Heiligenblut and from Kals. We must not forget that it was this society which constructed the Erzherzog Johannhütte on the *Adlersruhe*, barely 1,000 ft. below the highest peak of the mountain. In the later chapters much information is given as to other portions of the Glockner district, and the book will answer all the requirements of travellers proposing to visit Kals or Heiligenblut. Its handy shape will further contribute to secure it an extensive circulation.

Herr Meurer is the president of this club, and sends us two lectures delivered before it, and reprinted from its organ, the 'Oesterreichische Alpen-Zeitung.' In the former, on the Equipment of the Alpine traveller, many useful hints may be found, though the author is perhaps inclined to what English climbers would consider undue luxury in the mountains. No two persons agree as to every detail of an Alpine kit, and we therefore cannot commit ourselves to unreserved approval of all Herr Meurer's recommendations. They are mostly, however, very sensible and practical, though we cannot accept the reason given why 'Stegesen' are rarely used in Switzerland, viz. that their adoption would render expeditions so much easier that the guides would have to reduce their tariffs. We would rather attribute this holding back on the part of the guides to the fact that the ice and snow slopes in the Central and Western Alps are as a rule much longer and steeper than those in the Eastern Alps; consequently

such artificial aids would rather be a source of danger than otherwise. In his other lecture Herr Meurer describes his own experience on the Finsteraarhorn and briefly narrates the history of the early ascents, though he does not give any decided opinion as to the disputed claim to the honour of the first ascent. We would point out to Herr Meurer that the route re-opened by M. Cordier in 1876 has been taken at least once since that date, on which occasion the difficulties were found to be far less serious than had been supposed. Herr Meurer draws attention to the fact that no fatal accident has as yet occurred on this peak, a distinction which its neighbours are unfortunately rapidly losing. The Austrian nationality of the author comes out unmistakably in the amusing, if somewhat malicious, narrative of the experiences of a Prussian tourist on the Aletsch glacier.

Section Lyonnaise du Club Alpin Français. 3ème Bulletin. (Lyon : Pitrat, 1881.)

It is with great pleasure that we welcome the latest Bulletin (a substantial pamphlet of 125 pages) of this energetic section of the French Club. The 'Lyonnais' have always been to the front in the exploration of the ranges of Dauphiné and Savoy, and we hope will ever strive to maintain this proud position. This new publication gives fresh proofs of their activity. The school of climbers which aims at conquering lofty peaks and exploring little known regions is represented by Monsieur Sestier and Monsieur Benoist. The former describes an attempt on the Grande Casse (frustrated by weather), and his experience on the Aig. du Midi de Peisey, concerning which peak he will find some details (of which he seems to be unaware) in previous numbers of this journal.* Monsieur Benoist once more draws attention to the wonderful panorama to be had from the summit of the Grande Ruine, and narrates his passage of the Col Lombard, and attempted passage of a new col between the south and central Aiguilles d'Arves; the descent on the Valloires side proved impracticable, owing to a sheer precipice of 100 feet, and the party was forced to ascend the central Aiguille d'Arves (by the way taken in 1839) in order to escape from their unpleasant position. Monsieur Vignet gives a lively account of the Pralognan fête last summer, and Mons. Darnat publishes some rather pretty verses, though we miss the pieces which had such brilliant success at the aforesaid fête, for a separate printed copy of which we have to thank the accomplished author. Monsieur Catenod sketches in an amusing way the ascent of the Grand Veymont, a point near the Mont Aiguille, which it overtops by a good bit. M. Mital supplies a summary of the Alpine journeys (1841-1878) of the late vice-president of the Club, M. Anglés, whence we gather that as early as 1842 he visited the Oisans and the valleys near the Viso, in 1843 crossed the Col du Sellar from the Val Godemar to the Vallouise, and in 1847 explored the beauties of Cogné, the Val Savaranche, and the upper valley of the Isère. These early notices of visits to spots, even now unfrequented, are extremely valuable, and supplement the accounts of the English travellers, Brockedon and

* Vol. ix., pp. 98, 169, 238.

Forbes. Papers on the Vosges, the Pyrenees, and the Môle show that the sympathies of the Lyons section are not limited to their own part of France. It now includes no less than 545 members, and its library numbers 322 separate works. The whole history of the section goes far to show how advantageous it is from every point of view to have local societies or branches of a larger whole, which devote their energies to special districts of the great mountain chain. Yet excessive 'localism' is as much to be guarded against as excessive centralisation. The Lyons section seems to have hit the happy mean, and we hope will long continue its prosperous career.

Les Etapes d'une berline à travers le Tyrol, l'Engadine et les Grisons—Juin 1864. Par Louis Vignet. (Lyon: Pitrat, 1880.)

This is a most amusing account of a carriage journey from Verona to Coire by the Stelvio, Bernina, Maloja and Splügen, undertaken by the author and his wife. It is written with great *verve* and brilliancy, and could only be the production of a thorough Frenchman imbued with a keen appreciation of natural beauties. It is interesting also as giving an account of the Eastern Alps in the days before they had been opened up by the energy of certain enterprising explorers belonging to our own Club.

Zeitschrift des Deutschen u. Oesterreichischen Alpenvereins für 1881. (Vienna.)
Mittheilungen des Deutschen u. Oesterreichischen Alpenvereins für 1881. (Vienna.) Both edited by Th. Trautwein.

The German Alpine Club has now a larger number of members than any other Alpine Club in Europe. It is divided into 74 sections, which include over 9,000 members: hence it can easily support a *Zeitschrift* (appearing three times a year), in which long articles are printed; and *Mittheilungen* (ten numbers appearing a year), with shorter notes, reviews, reports from the sections, and business notices. In the numbers for last year we find many interesting papers, such as those of Herren Simony and Geyer on the Dachstein group, of our own member Dr. P. Güssfeldt on Alpine Travelling, of Dr. Moritz Hoernes on the Passes of Bosnia. There are besides several scientific articles on glacier phenomena as exhibited by the Pasterze Gletscher, the principles by which we should be guided in using and criticising a map, the method of drawing a panorama from a summit, &c. The short reviews in the *Mittheilungen* are generally very much to the point, and comprise nearly every important Alpine work which appears. Nor must we omit to mention the excellent maps, diagrams, and panoramas by which the publications of this flourishing club are always illustrated. Under its auspices there is now appearing an 'Atlas der Alpenflora,' to be completed in thirty-five parts, at the price (to non-members of the club) of two shillings a part. The specimen sent gives a favourable idea of the undertaking, which should meet with great support.

As a supplement to its periodicals the German Club has already published small and handy books on scientific subjects—*e.g.* Von Sonklar on Orography, Gumbel on Alpine Geology, Hann on Alpine Meteorology, and promises others on Alpine Anthropology and Botany.

Archives des Sciences Physiques et Naturelles. (Genève.)

Mons. Forel continues (in Vol. vi. No. 7 of this publication) his researches on glaciers already referred to (p. 285). A great many of his conclusions seem necessary consequences of modern discoveries as to the nature of glaciers. That the volume and pace of a glacier will vary according to the amount of overflow from the reservoir which feeds it, that the retreat of glaciers is mainly determined *not* by an increase of ablation at the lower end—by hotter summers—but by the falling off in volume and speed of the icy overflow from the upper region, are statements that invite our consent. And it is a matter of course that the advance and retreat of glaciers will follow, but not coincide with, the years of increased or diminished replenishment of their reservoirs, the interval being in each case dependent on the length and inclination of the ice-stream, and consequently being different in the case of different glaciers. Some observers have doubted whether the observed facts do not rather show a simultaneous advance of the Alpine ice. But, in our opinion, this objection would be fully met by a more minute observation of the records. Even a tourist can remember how the Glacier of Rosenlaui led the way a quarter of a century ago in retreat, and in the last few years the Bossons has made its forward start before the longer and more level Mer de Glace. Personal observations of the glaciers of Mont Blanc last summer showed a most cheering state of things. One *névé* had risen some 20 feet against the rocks. The 'palaces of ice' on the high shoulders of Mont Blanc, which a few seasons ago lay in ruins, had been again upplied into towers and bastions, the upper ice-fall of the Bossons bristled with a new set of pinnacles.

The newest point made by Professor Forel is perhaps his insistence on the fact, that the rate of motion varies with the volume of the glacier, and consequently that any series of observations, to be complete, must extend over many years both of advance and retreat. But we fail to find any explanation of the slower winter progress recorded by Professor Tyndall.

On one point we venture to differ from Professor Forel. In arguing that *nothing* but an increased snow-fall is required to give Switzerland another glacial epoch, he has, we believe, greatly under-estimated the increase in the effects of ablation produced by every extra 100 feet of descent towards the valley. If he will take into consideration other mountain regions having a heavier snowfall than the Alps (and particularly the glacier phenomena of the Arctic regions), he will probably be disposed to admit that the sun and the warmth of the earth effectually check the advance of the ice beyond a certain point, and that the result he anticipates would require a much more general change in the European climate than he allows for.

The same number contains an elaborate but inconclusive article by Dr. Marcet on the influence of altitude on the human frame and its functions. It is beyond our power to enter into any detailed examination of Dr. Marcet's many and minute experiments. But one may humbly point out where our individual experiences, at heights between 12,000 and 18,500 feet, do not agree with the writer's. With most of

our companions we do not find cold at great heights so trying as equal cold in the plain. Mountain sickness or headache is not produced by cold, but by exposure to the sun's rays reverberated from snow and ice. And we must confess with shame that though at great heights we can go longer without food, or with little food, than in the plain, it is rather the *quality* of the provisions—when we have any—than the *quality* of the air which regulates our appetite. What is wanted before this problem can be settled is a series of experiments on a large number of subjects.

D. W. F.

La Chaîne des Alpes vue de l'Aiguille du Dôme de Milan: Panorama d'Orientation dessiné d'après Nature, avec un Texte explicatif. E. F. Bossoli. (Pirola. Milan: 1878.)

Signor Bossoli's Panorama is far superior to the ordinary ill-executed works often put forth under that name. His personal acquaintance with the mountains has led him to take special pains to preserve their characteristic outlines; and the identification of the numerous peaks seems, as far as we can judge, accurate and well done.

Guida Geologico-Alpina di Bassano e dintorni, con uno Schizzo di Carta geologica ed uno spaccato. Da A. Secco. (Roberti. Bassano: 1880.)

Signor Secco has written a compact little guide to Bassano and its neighbourhood, which, without aiming at anything very great, amply succeeds in its object of giving notices of the various excursions to be made in that neighbourhood. The geological and botanical details which are scattered throughout its pages will be found useful by travellers with scientific tastes.

Sui Popoli Antichi e Moderni dei Setti Comuni del Vicentino. Da F. Molon, 2da edizione, riveduta ed ampliata. (Burato. Vicenza: 1881.)

Signor Molon sets himself to prove two statements, 1—that the aboriginal inhabitants of this part of the Alpine chain belonged to the Italic race; and 2, that the actual inhabitants of the Tredici Comuni, near Verona, and of the Setti Comuni, near Vicenza, are descended from a colony of West Goths, part of the army of Alaric. Both propositions involve thorny and difficult historical and philological considerations, and the method adopted by our author is not in all points successful, though his conclusions are probably true. He is a devoted opponent of the theory which would make them Cimbri, and loses his balance of mind in the presence of 'Celtomania.'

ALPINE NOTES.

THE ALPS OF NEW ZEALAND (cf. vol. x. 237).—We learn that the Rev. W. S. Green (Carrigaline Rectory, Cork), a member of the Club, left England in November for the purpose of exploring the little known snowy regions of New Zealand. He was accompanied by Ulrich Kaufmann and Emil Boss of Grindelwald. Everyone interested in the opening up of new districts to mountaineers will wish Mr. Green and

his companions all success in their adventurous journey. Mr. Green has kindly promised to let the readers of the 'Journal' have the earliest news of any ascents he may be fortunate enough to accomplish. In this connection it may be interesting to note that, according to the recent Government map of New Zealand, the height of Mount Cook has been determined (by 24 trigonometrical observations made at stations from 20 to 70 miles distant) to be only 12,349 feet, whereas the old Admiralty Survey gives it a height of 13,200 feet. We trust that Mr. Green's party will be able to settle this interesting question by observations made on the culminating point.

WINTER EXPEDITIONS IN THE ALPS.—This winter seems destined to be remarkable for the number of expeditions made at unusual periods. Hardly had the autumn tourists departed when a fresh band attacked the fortresses of nature, and with great success, as will be seen from the following details. The chief expedition as yet reported is the ascent of the Wetterhorn by way of the Urbachthal, achieved on December 7 last by Mr. James Eccles, with Melchior Anderegg, Johann von Bergen, and Johann Jaun as guides. They spent the day of December 6 in reaching the Dossenhütte from Meiringen, snow falling a great part of the time. Next morning, starting at 7 A.M., they reached the summit of the peak at 11.40 A.M. They halted there 15 minutes, and were back at the hut by 3 P.M. The snow was in very bad order up to the hut, but in good condition from that point to the summit. Herr Simon, one of the Federal Engineers, and Herr Ch. Montandon, starting from the Spittelmatt Alp on the Gemmi, went up the Altels on November 7 and found it so pleasant and warm on the summit that they remained there for three hours. Leaving at 1 P.M. they reached Thun *on foot* at 6.30 in time for the last train for Bern. No guides were taken on this expedition. The state of the snow and the weather were all that could be desired. The same party, with the addition of Herr A. Rubi, again without guides, made on November 14 an attempt on the Weisse Frau, starting from the Blümlis Alp Club hut, but encountering much ice were forced to retreat about 100 feet below the summit, as the advanced hour of the day did not allow them time to cut the sixty steps (taking each two minutes) required to attain the desired peak. The Piz d'Aela was ascended on November 12 by Pfarrer Gregori of Bergün, with local guides, who also on November 25 led a Swiss and an Austrian climber up the same peak. In both cases 10 hrs. were taken from Bergün to the summit. Snow and weather magnificent. The Tödi was climbed on December 31 by Prof. Gröbli, with a single guide. Many smaller expeditions are reported, so that winter ascents may be considered to have passed out of the stage of startling events and to have become a recognised form of mountaineering. The innovation of dispensing with guides under such novel circumstances is one, however, of very doubtful expediency.

MOUNTAINEERING WITHOUT GUIDES.—We learn that Mr. F. Gardiner and Messrs. C. & J. Pilkington accomplished, between July 19 and August 18 last summer, a number of expeditions, in addition to the Jungfrau from the Wengern Alp, described in the present number, no guides being taken on any of them. The list includes the Susten-

horn from the Stein Alp, crossing to the Trifthütte by the Thieralplijoch, the Daimmstock, Wetterhorn (crossed from Rosenlaui to Grindelwald), the Finsteraarhorn, Mönchjoch, Petersgrat, Gross Nesthorn, from Ried by way of the Beichgrat, descending to Visp by the Gredetschjoch and Thal, Matterhorn (up and down from Zermatt in one day), Col d'Hérens, Col du Grand Cornier, Moming Rothhorn (crossed from Mountet hut to Zermatt). We most heartily congratulate these enterprising gentlemen on having carried out successfully so splendid a series of expeditions without guides, which we believe is without parallel in Alpine history.—Ed.

CONGRESSES OF THE FOREIGN ALPINE CLUBS.—The annual *fête* of the French Alpine Club was held at the little village of Pralognan, in the Tarentaise, on August 14 last. There were about 200 members and friends (including twenty ladies) present, most of them coming up in the course of the day from Moûtiers. The banquet took place, in the early evening, in a marquee erected on a level meadow in full view of the Grande Case, which, however, obstinately concealed itself the greater part of the time, the magnificent weather of the previous six weeks having most unfortunately broken the night before. Mons. Xavier Blanc, the President of the Club, was in the chair, and was supported by Mons. Talbert, Mons. André Puisseux, the Presidents of the Tarentaise, Maurienne and Côte d'Or sections, the Sous-Préfet of the Department, the mayors of Moûtiers, Brides, Bozel, and Pralognan, &c., &c. The Paris, Tarentaise, Lyons, and Chambéry sections were those most numerously represented. The whole affair was most successful, and the *coup d'œil*, when the Chinese lanterns were lighted inside, while blazing torches were placed at intervals around outside the tent, was very striking. Many speeches were made, but no toast was more enthusiastically received than that of the Foreign Clubs, which were represented by the President and several members of the Geneva section, and by the Editor of the 'Alpine Journal,' who desires to acknowledge publicly the courteous and flattering reception he met with as the solitary representative of the English Club. The evening was wound up by a display of fireworks, and the assembly dispersed carrying with it pleasant recollections of old friendships renewed and new ones formed. Bad weather prevented many of the projected excursions from being made, and imprisoned the few who stayed on at Pralognan in Mons. Favre's fair little Hôtel de la Vanoise. Pralognan is the most central point of the Tarentaise, and many ascents may be made from it, while passes lead in every direction. It is now connected with Moûtiers by a carriage road.

The Congress of the Italian Club took place at Milan on August 31, and was very numerously attended, about 275 members being present. It seems to have been a brilliant success, but was saddened by the recent death of Signor D. Marinelli. The excursion (Sept. 1-2) to the Monte Grigna (2,410 m.), above the Lake of Como, proved attractive to a large number of tourists, sixty-three of whom opened the new Club-hut (capable of holding twenty-four persons, and situated at a height of 1,876 m.) on that mountain, and of these fifty-three persevered to the top of the peak, despite very bad weather; a supper was

given at Esaino in the evening by the Milan section. The meeting next year will be at Biella. The extraordinary Assembly of Delegates from every section of the Club resolved, on December 11 last, that, from the commencement of 1882, the Club would publish at the end of each month a *Rivista Alpina Italiana*, the *Bollettino* retaining its former title but becoming an annual publication, an arrangement just adopted by the French Club, and which therefore, it may be presumed, is found to be the most convenient plan.

The Club-Fest of the Swiss Alpine Club took place at Basel on September 10 and following days. One hundred and sixty members, besides those belonging to the Basel section, were present. The weather was very favourable and everything went off well, but the sad news of the Elm landlip arriving in the midst of the festivities caused a great sensation, and a collection was at once made for the sufferers. The Central Assembly approved the contract for insuring the lives of guides, entered into by the Central Committee with the Insurance Company 'Zürich' for three years, on the basis of the plan mentioned in our August number. More than 100 guides (mostly Oberland men) took advantage of this arrangement during the past summerseason. Mr. Whymper was elected an honorary member, and Neuchâtel fixed on for the *fête* of 1882. It was also resolved to take part in the International Congress of Alpine Clubs which is to meet at Salzburg in 1882. The Diablerets section was selected as the seat of the central government of the Club for the next three years. The Club includes about 2,500 members.

The German Club held its eighth general meeting at Klagenfurt in Carinthia on August 21-3. The night *fête* (August 21) at Portschach and on the Wörthensee seems to have been very splendid. The general meeting and banquet were held at Klagenfurt next day. Many mountain excursions had been arranged by the neighbouring sections of the Club, but most of the strangers preferred to visit the caves of Adelsberg, near Trieste. The Congress was greatly favoured by weather, but the heat seems to have been overpowering. It may be mentioned that this Club now numbers over 9,000 members.

An International Alpine Congress (which will be at the same time the ninth General Assembly of the German Alpine Club) will meet at Salzburg in the latter half of August next. Alpine maps, glacier phenomena, the construction of club huts, are specially enumerated as subjects for discussion; but other points may be raised by members of the Congress. Members of every Alpine Society are invited to attend. A detailed programme will be published in April.

AIGUILLE DE GRÉPON.—As the attention of climbers has lately been directed towards the Aiguille des Charmoz, it may not be out of place to point out the singular disagreement of the best guide-books and maps as regards the position of the Aiguille de Grépon with relation to the Charmoz. There appear to be two main opinions. One attributes to the Grépon a height of 12,044 feet (3,670 mètres), and places it west of the Charmoz. We find this idea in the panoramas in Joanne's 'Suisse,' and in Murray's 'Switzerland' (except in the latest edition of the latter), in Mr. Ball's 'Alpine Guide' (Western Alps edition of 1875, p. 200), and in Mr. Reilly's 'Map of the Chain of

Mont Blanc,' though this last altogether suppresses the Aiguille du Plan, attributing its height to the Grépon.

The other better accredited opinion makes the Grépon 9,408 feet (2,866 mètres high), and places it north of the Charmoz. So De Saussure,* Bourrit,† Wills ‡ (who calls it Petit Charmoz), Mieulet's 'Carte du Massif du Mont Blanc,' Viollet-le-Duc (in the diagram on his map, and in the text of the book, 5-6), Tschudi,§ the map in M. Durier's book on Mont Blanc, and Joanne.||

The Col effected by M. Guyard in 1876 between the Charmoz and the Grépon, and called by him *Col de la Bûche*,¶ seems to be the same as the *Passage de l'Étala* mentioned by Mr. Wills.**

The Grépon was ascended before 1856,†† and it is to this peak that Mr. J. A. Hutchison's note ‡‡ really refers.

DEATH OF PETER EGGER.—This well-known Grindelwald guide met with an untimely end on November 14 last under very distressing circumstances. The following particulars are derived from a letter in the 'N. Alpenpost,' by Herr Strasser, the pastor of Grindelwald:—With Herr Hans Anderfuhren of Interlaken, Rudolf Kaufmann, and Peter Schlegel he started on November 18 for the Bergli hut on the Mönchjoch, as the Bern section of the S.A.C. proposes to rebuild it and wished for information as to its actual condition. Below the Kalli, at the point marked 2,824 mètres on the Federal map, Schlegel was taken ill: it was then resolved that the others should push on to the hut, a short half an hour beyond, as darkness was coming on, and that one of them should return for Schlegel. On the way they had to pass two great crevasses. Soon after arriving at the hut, Egger went back to the upper of these crevasses and called for Schlegel, but receiving no answer and thinking that he was not required, remounted to the hut. Soon, however (a little before 7 P.M.), a shout was heard from Schlegel, and his two comrades prepared to descend to meet him. But their lantern was in Schlegel's knapsack, with part of the provisions, and that belonging to the hut had entirely disappeared. So Egger arranged a make-shift in the usual way by sticking a bit of candle in the neck of a bottle, the lower part of which had been broken off. Kaufmann accompanied Egger to the great upper crevasse, and, after making the rope fast to his axe, planted in the snow, in order to aid in bringing up Schlegel, returned to the hut. Egger soon reached the sick man, and apparently began helping Schlegel to put his English lantern together. While holding his improvised candlestick in order to assist his comrade, Egger in some way struck the bottle with his right hand and severed the radial artery. The blood at once spirted out in such a way as to terrify both men. Schlegel bound up the wound, but could not check the flow of blood. They called for aid, but their comrades above did not dare descend,

* *Voyages dans les Alpes*, vol. ii. p. 55.

† *Nouvelle Description des Alpes*, vol. iii. p. 149. ‡ *Wanderings*, p. 87.

§ *Savoien*, p. 70; *Tourist in der Schweiz*, 22nd edit. p. 538.

|| *Jura et Alpes Françaises*, p. 414

¶ *Alpine Journal*, vol. viii. p. 344; *Annuaire du C. A. F.*, 1876, p. 229.

** *Wanderings*, p. 187.

†† Wills' *Wanderings*, loc. cit.

‡‡ *Alpine Journal*, vol. x. p. 95.

having no rope or light. When the moon rose, Herr Anderfuhren and Kaufmann came down, bringing hot chocolate. By that time Egger had become very weak. He was placed in a hole dug in the snow and wrapped up in the flannel shirts which his comrades stripped off. Schlegel was left to watch him, and the other two hurried down to get aid from Grindelwald, but poor Egger succumbed about 6 A.M., long before their return. Schlegel waited an hour more, and then, covering up the body, went down to the valley. The body was brought down next day by a strong party of guides. Egger was forty-nine years old, and leaves a widow and four children (three quite young), subscriptions for whom will be gratefully received by Herr Gottfried Strasser, pastor of Grindelwald. Herr Strasser had received up to December 31 about 2,000 francs for the relief of the unfortunate man's family. It may be mentioned that he had insured his life under the scheme mentioned in our August number; the insurance terminated on October 15 with the end of the summer climbing season, but we are pleased to learn that the Insurance Company have sent 500 francs to Herr Strasser for Egger's family. He had been a guide since 1863, but was perhaps better known to Swiss than to English climbers. Among his chief feats were the second ascents of the Schreckhorn and the Bietschhorn, the first of the Mönch from the Wengern Alp, of the Lauterbrunnen Breithorn, of the Lauteraarhorn, and of the Wetterhorn from the Huhnergutz Gletscher, and the ascent of the Mönch in January 1874. He had also travelled in the Pennine and Graubünden Alps. He was an ornament to his profession, and his loss will be deeply felt.

ACKNOWLEDGMENTS.—The Editor has to acknowledge with thanks the receipt of a guinea for Mr. F. F. Tuckett for the Imseng and a guinea from Mr. H. Wagner for the Pedranzini fund; also of a guinea from Mr. H. Wagner towards the support of Christian Inäbnit.

ALPINE DINNER AT GRASMERE.—It is proposed by some members of the Alpine Club to dine at Brown's Prince of Wales Hotel, Grasmere, on Saturday, April 15. The cost of the dinner will be one guinea a head. Morning dress. Further particulars will be announced in the Club circulars, but intending diners will oblige by giving as early notice as practicable either to Mr. E. Hulton, Union Club, Manchester, or to Mr. F. Gardiner, Gresham Buildings, 101 Dale Street, Liverpool.

THE BERGSTURZ AT ELM.—The little village of Elm in the Sernfthal, though lying rather out of the beat of ordinary travellers, is doubtless known, at least by name, to many of our members. The terrible catastrophe which has overwhelmed it, and which it is said will entail the abandonment of the old site, has been so fully described in the newspapers, that a short notice may suffice here. According to the 'N. Alpenpost' of Zürich, there had been premonitory rumblings and quakings for several days previously, so that the Cantonal authorities had forbidden the cutting of wood, and recommended the stopping of the slate quarrying in the most exposed spots. But no one was prepared for the extent of the fall which took place at 5 P.M. on Sunday, September 11. The land, rocks, and woods below a rugged rocky summit gave way and fell a distance of 1,500–2,000 ft. It started from the point marked 1,642 mètres above the Tschingelwald, S. of

Elm, went first in a N.E. direction to Gehren over the Plattenberg quarry, then through the Unterthal in the direction of Schwände. A few houses only were destroyed by this first fall, and the villagers of the neighbouring hamlets were hastening to aid the unfortunate people when two new and more terrible falls took place and overwhelmed all—rescuers and sufferers. The entire hamlet, and also all the quarry buildings, of Unterthal, are destroyed, and 114 lives at least lost. In all twenty-two dwelling-houses and fifty stables have been swept away. The loss of the stock of slates alone is estimated at 30,000 francs. The former site is covered by a mass of rocks and débris, in parts 100 feet deep. According to Prof. Heim's official report, the fallen mass (the estimated weight of which is 20,000,000 tons) extends for $1\frac{1}{4}$ m., and covers an area estimated at a square kilometre. The great danger now is the threatened fall of the rocky Risikopf, already much shattered. This would produce even greater destruction, and as heavy rain or the sudden melting of the winter snow would bring it down in one mass, attempts have been made to avert this catastrophe by bombarding it with artillery, with the idea of gradually breaking up the huge mass. But as yet they have not been attended with any great degree of success. The causes assigned for this great landslip, which exceeds in magnitude all that have taken place since the destruction of Goldau by the fall of the Rossberg in 1806, are the accumulation of water in the slate quarries, which have not been carefully drained, and the shock caused by the blasting. The inhabitants of Elm subsisted partly by pastoral pursuits, partly by slate-quarrying. The news reached the Swiss Alpine Club during the 'Fest' at Basel; and 1,000 francs was at once voted, besides large private subscriptions, for which there is urgent necessity, as continued rumblings threaten a new disaster.

BREILHORN (Furggengrat).—I could not help noticing as I passed from Mr. Whympers's 'Breiljoch' * along the Furggengrat last summer that the highest point in the Grat has no name of any sort ascribed to it. The eminence referred to has the appearance, as seen from the Zermatt valley, of a stunted snow pyramid capped by a small tower of rock. This point lies immediately to the west of the Theodulhorn. The latter is marked 3,472 mètres in the Federal map, whilst the peak I refer to is put down as 3,498 mètres, and is clearly the higher of the two. Would it not be appropriately named if called, in future, the 'Breilhorn'? The name 'Furggenhorn' is already allotted to a small peak (2,383 mètres) near Grindelwald; and moreover the pass made by Mr. Whympers in 1863, styled by him 'Breiljoch,' is connected with the point referred to (3,498 mètres). Mr. Morshead's pass (made likewise in 1863), which lies immediately at the base of the Matterhorn, at the extreme west end of the 'Grat,' is separated from Mr. Whympers's pass by a low peak, and may, not inaptly, be termed as the Furggenjoch,† whilst the title 'Matterjoch' may be fairly excluded from the map of the district for the sake of clearness. At present 'Matterjoch' is used as the name of Mr. Morshead's pass, and also as a synonym of the Col S. Théodule‡ in the same ridge.

F. T. WETHERED.

* *Soramblies*, pp. 137, 138.

† *Ibid.* p. 138, note.

‡ Federal map and S. A. C. map.

PROCEEDINGS OF THE CLUB.

The Annual General Meeting of the Club was held on Wednesday, December 15, 1881, Professor BONNEY, F.R.S. (President), in the chair.

The following gentlemen were balloted for, and elected members of the Club :—Messrs. J. STAFFORD ANDERSON, F. MAITLAND BALFOUR, F.R.S., G. W. HARTLEY, E. H. HAYES, H. MARCET, F. TAYLOR, M.D., W. H. WINTERBOTHAM, J. TAYLER WILLS, ARNOLD WHITE, and the Rev. F. E. NUGER.

Messrs. CHARLES PILKINGTON and HENRY PASTEUR were unanimously elected members of the Committee in the places respectively of Messrs. F. GARDINER and A. W. MOORE, who retired by rotation. The President, Vice-Presidents, Honorary Secretary, and other members of Committee, being eligible, were re-elected.

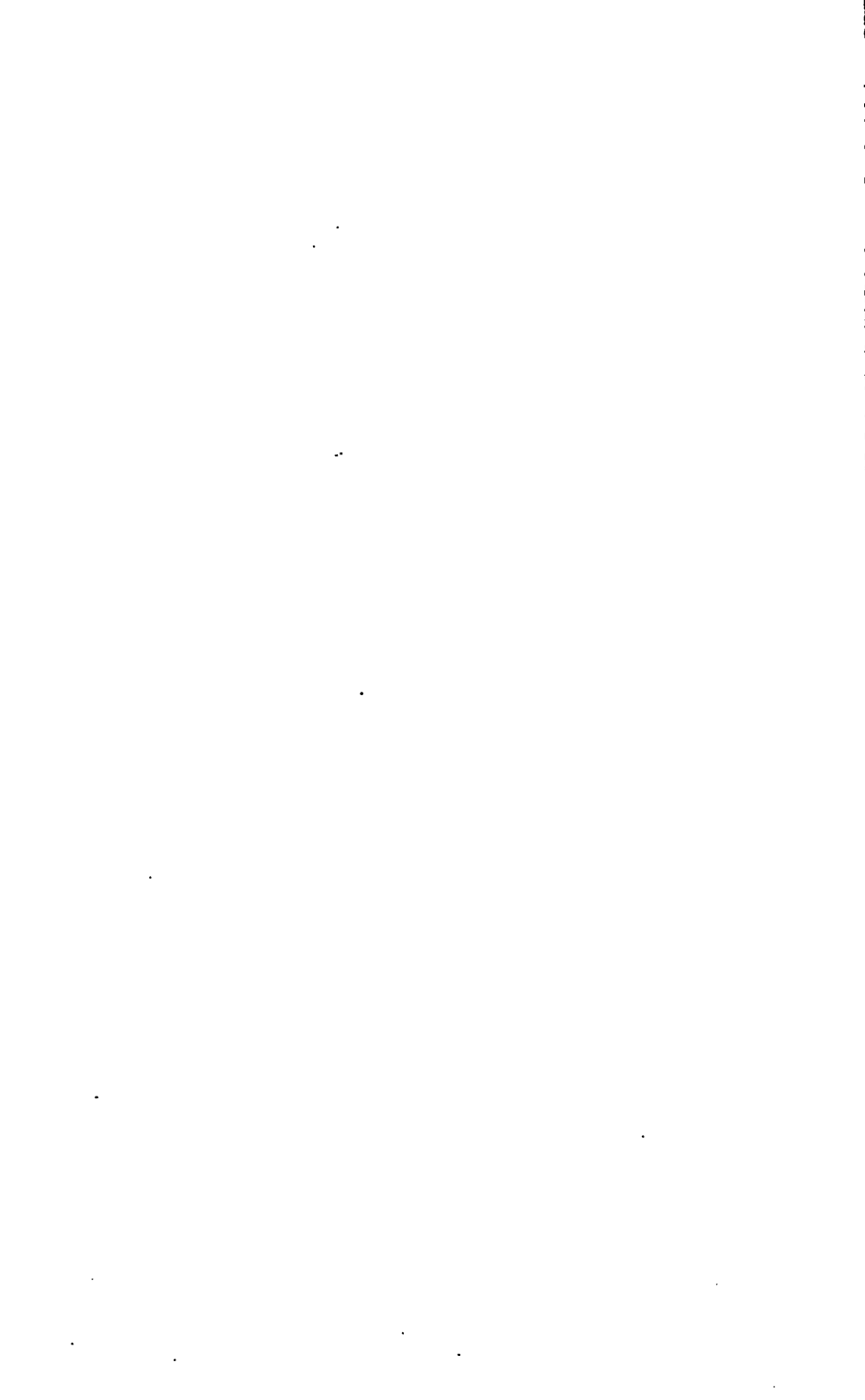
Mr. A. E. CRAVEN made a statement to the Club with regard to the fund which had been collected for the relief of Christian Inäbnit, and read an interesting letter which he had received from Herr BOSS, the landlord of the 'Bear,' Grindelwald, upon the subject. Mr. OAKLEY MAUND then read a paper upon 'The Eiger from the Mitteleggi and the Gross Lauteraarhorn,' at the conclusion of which a discussion took place, in which the President and Messrs. BAUMANN, DENT, HARTLEY, and P. W. THOMAS took part. Mr. MAUND having briefly replied, a cordial vote of thanks was, on the motion of the President, accorded to him for his most interesting paper.

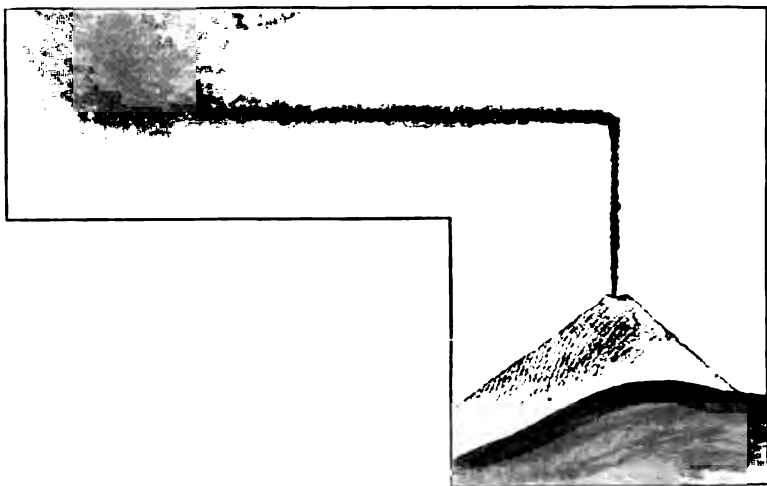
The Annual Alpine Picture Exhibition and Winter Dinner took place at Willis's Rooms, as usual, on the afternoon and evening of the following day. The Exhibition of Alpine Photographs was thrown open at 2 P.M. and was densely crowded throughout the greater part of the afternoon by members of the Club and their friends. The number of pictures exhibited was not perhaps so great as in some previous years, but the general standard of the works on view was of a very high order, and the collection of photographs (amongst which Mr. WHYMPEL's views of the Great Andes of Ecuador and Mr. W. F. DONKIN's collections should particularly be mentioned) far excelled anything before seen at previous exhibitions.

In the evening about 150 members of the Club and their friends sat down to dinner. Amongst the guests were the Lord Chief Justice of England (Lord Coleridge), Leonard Courtney, Esq., M.P. (Under-Secretary of State for the Colonies), Matthew Arnold, Esq., and Professor Bonamy Price.

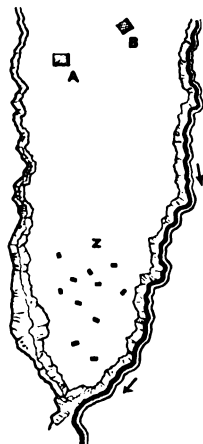
Errata in last Number.

- Page 336, line 14 from bottom, *for* '1868' *read* '1869.'
- " 348, " 17, *for* 'the same party' *read* 'Mr. Coolidge with the Almers.'
- " 349, " 4 from bottom, *for* 'pass' *read* 'grass.'
- " 350, " 6 " " " 'more and more to the right' *read* 'more and more to the left.'
- " 358, last line, *for* 'vol. iv.' *read* 'vol. ix.'
- " 360, *for* 'Tschingel' *passim read* 'Tschingel.'
- " 368, line 10 from bottom, *after* 'valuable study' *insert* 'on the Waldensian valleys.'





ERUPTION OF COTOPAXI, JULY 1880.



PLAN OF CAMP, JUNE 26-27, 1880.

A Tent. B Booth made by our Natives. Z The Animals.

THE
ALPINE JOURNAL.

MAY 1882.

EXPEDITIONS AMONG THE GREAT ANDES OF ECUADOR.
VI. By EDWARD WHYMPER.

June 7, 1880. From Quito to Machachi.—Left at 6.30 A.M. with J. A. Carrel, Campaña, David, and Cevallos. A few miles on our road we met a small knot of people who had assembled to bid our interpreter farewell, including his wife, who cried, and screamed, and fell on his neck as if he were going to execution.

Arrived at Machachi 3.30 P.M. Found the road was now several inches deep with dust, through absence of rain. Put up, as before, at the 'tambo' of Antonio Racines, and rejoined Louis Carrel.

- „ 8. *From Machachi to Camp on North Side of Illiniza.*—Left at 7 A.M. with two Carrels, Campaña, David, and Cevallos' man to make another attempt to ascend Illiniza. Took five beasts for riding or cargo, and borrowed a llama experimentally from David. This animal was well domesticated, and trotted alongside our party without being troublesome, wearing an amusing expression of demure self-satisfaction on its face, as if perpetually saying to itself, 'See how well I go! See how nicely I behave!' It was loaded with the photographic apparatus and other small matters, amounting in all to about 24 lbs., and it carried that amount easily.

Went southwards along the high road until 9.50 A.M., as far as the bridge called Chishinchi, and then turned off to the right through the premises of the hacienda of the same name. Made straight for the depression between the Great and Little Illiniza, and at 4 P.M. decided to camp at a place slightly lower than the level of the col. Established camp with assistance of the others (15,446 feet), and then sent all (excepting the Carrels) down to a place

2,000 feet lower, where there was wood and grass. Snow fell heavily on the tent for two hours, and it blew hard all night from E.S.E. Min. temp. in night, 26·5°.

June 9. Attempt to ascend Illiniza from the North.—At day-break temp. was 32°, and it was blowing hard from N.E. Started at 6.20 A.M., and followed a general S.W. by S. course towards the highest point. Rocks glazed and frosted, and exceedingly unpleasant to touch. Wind dangerously high, so that I was once blown out of my steps. Made fair progress, however, as we were exactly following the route taken by the Carrels on their ascent at the beginning of May; but had they not well marked the way we should have been unable to advance, as on this day we seldom saw more than 200 yards in any direction. At 8.30 A.M. we were higher than the summit of Little Illiniza, and on a difficult and steep ridge, with a complicated cornice which was very troublesome; and at 9 A.M. arrived at the foot of the terminal cliff of glacier which crowns the summit of the main peak. At a distance of about 250 feet below the summit I gave the order to turn, as there was more risk than I cared to encounter owing to the high wind, cold, insecure footing, and enormous and very rotten cornice immediately above us. After observing barometer,* thermometer, and collecting specimens of the rocks, returned as quickly as possible to the tent, snow falling for great part of the way. Reached camp at 11.10 A.M., and soon after midday the others came up with the beasts, according to orders, and we then packed and descended to Machachi, getting there about 7 P.M. The Carrels, therefore, alone made a complete ascent of Illiniza. They told me after their ascent that the final point was very tough, and that it would be unwise to risk the barometers on it. Their ascent was made in fine weather, and in the 40 days which elapsed before they returned with me the cornice at the summit had developed prodigiously; and on June 9 the eastern side (the only direction in which it was assailable) was composed of an enormous

* Height attained on this occasion was 16,925 feet. Reiss and Stübel's altitude obtained by Δ is 17,405 feet. This appears to me to be too high, as we were certainly within 300 feet of the summit.

mass of icicles, many of which were fifty feet and upwards in length, and must have weighed many tons apiece. These broke away from time to time over the line of ascent taken by the Carrels, and for some distance before we turned we had been crawling amongst them and their débris, never knowing when another would come down. It was obvious that at least several weeks would be required to produce a change for the better; so we left Machachi without making any further attempt to ascend this mountain.*

June 10-11. *At Machachi, packing for Homeward Journey.*—

On the 11th inst. walked six miles over measured ground on the high road to see what effect an altitude of 10,000 feet had upon my rate, J. A. Carrel taking times with chronometer. In another place details will be given, but want of space renders it impossible to say more here than that I found this moderate altitude caused a diminution in my rate of more than half a mile per hour.

„ 12. *From Machachi to Latacunga, by the Old Road through Mulalo.*—This was a route different from that taken when we came north. Near the hill Callo visited the remains of the Inca house referred to by Humboldt. Left Machachi at 7.30 A.M., and arrived at Latacunga at 4.30 P.M., putting up, as before, at the hôtel of Pompeyo Baquero, near the central plaza.

„ 13. *From Latacunga to Ambato.*—Returning over the ground traversed on January 24. Put up at the Hotel Nacional, a dirty place, at which we used to get dinner during our previous stay. The charges made at Ambato and at Latacunga when returning, under the management of Campaña, were about half those made when Mr. Perring was our interpreter. Left Latacunga at 9 A.M., and arrived at Ambato at 4.35 P.M., riding quickly part of the distance.

„ 14. *Ambato to Riobamba viâ Mocha.*—As far as the village of Mocha the road was over ground we had already traversed. Left Ambato 6.20 A.M., and

* The mountain Antisana can be seen from the front windows of the tambo at Machachi, and Illiniza from the back windows. Louis Carrel tells me that during his five weeks' solitary residence at this place he saw the former mountain only *four* times, and the latter only *twice*.

arrived at Mocha 11.5 A.M. A little to the south of this village the road to Riobamba leaves the main Quito road, and passing over a wild part of the Paramo (moor) of Sanancajas descends rather rapidly into the basin of Riobamba. Left our baggage train slowly trailing over the Paramo, and galloped into Riobamba with Campaña in search of lodgings, arriving at 6 P.M.* The only tambo in the place was full of the train and baggage of M. le Baron Gabriel de Gunzburg, who was about to undertake a voyage of discovery to the east and to the head waters of the Amazona. He had engaged my ex-interpreters, Mr. Perring and Mr. Verity, had a French valet, a nice poodle, and was otherwise well provided for. There being no room at the tambo, we searched for a lodging elsewhere, and had much difficulty in finding anyone who would take us in. The baggage arrived at 8.30, before we had found a place, and ultimately we encamped in a vile den full of vermin.

June 15. At Riobamba preparing for Journey to Altar.—Shifted ourselves and baggage into another house, in the Calle de Bolivar, where we were fairly comfortable and very civilly treated. Riobamba is a large town, covering a considerable area, and is reputed to contain more than 20,000 persons; but, although there is probably accommodation for this number, I doubt if there are more than 7,000 in the place. It has a deserted and empty look. Food was tolerably abundant, and moderate in price. We got bread, meat, and potatoes from Indians on the Plaza, and sardines, Bass's ale, &c., in the little shops about the town. Met here the Yankee Jew whom I had seen at Cotacachi and Quito, who was dealing in everything which seemed promising. He was good enough at Quito to purchase my surplus medicines, including some dozen boxes of pills (three pills in a box), each pill being warranted to soften anything however adamantine. I heard that he had taken an entire box in order to make sure; it worked wonders, and prevented him from walking for several days. I asked him how he found the pills, and he

* From numerous observations of merc. bar., the height of Riobamba appeared to be 9,038 feet. Reiss and Stübel say 9,180.

said with emphasis, 'Real fine medicine that, mister; no lying about that medicine, mister.' He wanted more, but I refused to trade, and let him have an ounce of bromide of potassium, used by photographers as a 'restrainer,' to counterbalance the too rapid 'development' of the pills.

- June 16. *From Riobamba vid Penipe to the Hacienda Candelaria.*—Left the bulk of the baggage at Riobamba, and several mules to recruit. Sent back several broken-down beasts with one man to Machachi.

Started this day at 7.40 A.M. on our way to Altar. We had only seen this mountain on one occasion (from Chuquipoquio), and not at all from Riobamba. At the latter place some persons declared it was possible to reach the crater in 8 hours, and others that it would take 4 days. We could not learn anything as to the mode of approach, except that a route led through the village of Penipe, and we accordingly steered N.E. by N., and arrived at Penipe (8,100 feet) at 12.40. Brought a letter to the magistrate of the place (Jefe Político), and found he was the village tailor. Got some information about the route from him and others, and at 3 P.M. went on to a small farm called Candelaria (9,400 feet), a wretchedly poor place, where nothing eatable could be had. Arrived there at 6.15. The proprietor claimed to be the owner of the whole of the mountain Altar and all the country between it and Sangai. He readily agreed to come with us for eighteenpence a day and his food; but his readiness was due, we subsequently found, to his belief that we were going to discover 'much treasure' on his property. Camped in the tent outside this hut, and sent back the beasts for some distance, as there was no food for them.

- „ 17. *From Hacienda Candelaria to Camp in the Valley of Collanes.*—Left at 6.45 A.M., and at 8.40 came to a patch of open ground in the middle of a forest, when the master of Candelaria, who acted as guide, said mules could go no further. For the remainder of the journey, until our return to this spot, everything was carried on men's backs. Left Cevallos behind in charge of his beasts. Party going on consisted of the Carrels, Campaña, David, and the young man Domingo, from Machachi, four porters from

Candelaria and their master—in all eleven persons. All the food required for the party had to be carried, as nothing could be procured on the spot.

Campañã had been in the valley which we were about to enter (Collanes) in 1872 with Reiss and Stübel, and he would have had us camp in the same spot as our predecessors. I objected to this, as the place was too close under the peaks of Altar to let us plan a route, and we accordingly camped in a little clump of trees (12,540 feet) at 4 P.M. outside the crater, and, as we afterwards found, not far from the foot of the highest point of the mountain. Part of the ascent on this day was over exceedingly steep ground, quite impracticable for beasts. Our porters carried on an average 70 lbs. apiece, yet walked away from us in fine style. They were the best porters we had on the journey. Min. temp. in night 29°.

June 18. *In Camp in the Valley of Collanes.*—Finding that we were nearly under the highest peak, and that there seemed (from such glimpses as I could obtain through the clouds) very little chance that an ascent of it could be effected from the *inside* of the crater, I sent off J. A. Carrel with two men at 5.50 A.M. to go round to the outside of the highest peak, and Louis Carrel with another man in the exactly contrary direction to the outside of the second peak, to report on their appearance from the *outside*, and remained in camp myself. At 7 A.M. two lads came up the valley with more food. Soon after midday J. A. Carrel returned, reporting unfavourably; and at 4 P.M. Louis returned, saying that he had not been able to see the summit during the whole day, but that he thought we could go as far as he had seen. Determined to shift camp to the N. side of the mountain outside the crater if weather would permit. Min. temp. in night 33·5°.

„ 19. *In Camp in Valley of Collanes.*—Terrible wind prevailed in the night and nearly blew tent down, though it was well protected by trees. The same state of things continued all day, and rendered it impossible to shift camp. Much new snow fell on Altar and down to our level. At night wind fell. Min. temp. 33·5°.

„ 20. *From Camp in the Valley of Collanes to Camp in*

the Valley of Naranjal.—Broke up the camp and left at 7.25 A.M., crossed a small ridge running out of the N.W. end of the crater, and descended into a valley (Naranjal), where I spied a big rock surrounded by some small trees. Camped under it (13,053 feet). The second peak rose on the other side of our valley, almost exactly due E. of us. In afternoon went with J. A. Carrel to the crest of the ridge on our side of the valley to see if I could make out a route, and to try to get angles to fix our position. After waiting two hours enveloped in mist and seeing nothing, we descended to the camp, and found it surrounded with flames, Louis Carrel having set fire to the grass to amuse himself. All hands had to work for an hour to beat out the flames and cut down bushes, and we narrowly escaped being burnt out. Continued to be windy and misty all night, and nothing could be seen. Min. temp. in night 34°.

June 21. *From Camp in Valley of Naranjal to Penipe.*—In the morning it continued as before, fog right down to the bottom of the valley, and a wretched drizzle falling. Broke up camp in despair, as the master of Candelaria gave us no hope of improvement. Finding he was a large landed proprietor, and that some of his land was well adapted for grazing, I asked him how much he would sell a tract we pointed out, equal to about twenty square miles. He said 100 pesos (14*l.*). Thought then that I would make a bid for Altar, and asked him how much he would take for the whole mountain. But he said he would not sell it at all; and being asked 'Why?' said he was convinced it contained 'much treasure.' This gentleman had no shoes or stockings, and was almost *sans culottes*.

Went rapidly down the valley of Collanes, our porters, as before, walking admirably. Picked up Cevallos and the beasts. Left Candelaria at 2.30 P.M., and arrived at Penipe at 5.5 P.M. The village tailor put himself and his house at our disposal, but recommended us to sleep outside, as he said, with unusual frankness, there were almost too many fleas inside for his own comfort. Obtained here numerous antiquities in good preservation.

„ 22. *From Penipe to Riobamba.*—Left at 7.30 A.M., and got back to Riobamba at 12.30 P.M., calling at

almost every Indian hut on the way in search of antiquities, but obtaining scarcely anything, as the country had been recently scoured by agents of Baron Gunzburg. At night saw Chimborazo from Riobamba by moonlight, perfectly unclouded, incomparably the finest sight we saw during the journey.

June 23-24. *At Riobamba.*—Preparing for journey to Carihuirazo, and for a tour of Chimborazo. Received a letter on the 24th from our Consul at Guayaquil, which he had written and despatched on April 3. All letters in this country are liable to be opened and delayed.

„ 25. *From Riobamba to Camp on Lower Slopes of Chimborazo, near Chuquipoquio.*—Despatched my party at 9.15 A.M., consisting of the Carrels, David, Campaña, Cevallos, Domingo, and 11 beasts, and followed at 11.15. Made straight for the depression between Chimborazo and Carihuirazo, and camped at 5 P.M. about 3 miles from the tambo of Chuquipoquio, a place which would have been more convenient as a resting-place, but which we declined to enter again, having been fleeced there in the previous January. Day rainy, and very heavy rain in night. Min. temp. in night 30.5°.

„ 26. *At Camp; Measurement on Road, &c.*—Sent out Domingo to cut firewood; despatched Campaña and David to Mocha and neighbouring villages to collect and to buy food; and went with the Carrels to measure on the high road. Measured more than 14,000 feet on a straight bit. On return to camp found that Domingo had been assailed by two men, who took his macheta (large knife) away, and he had ransomed it only by giving up the money he possessed. At dusk a horseman rode up from Chuquipoquio, and insolently demanded payment for camping there and for the grass our beasts were eating. Had it explained to him that if he did not take himself off he should be whipped off. He rode away shouting that he would come back at night and steal our animals. About 9 P.M. Campaña and David came in in a state of excitement, saying that a few miles off two men had spread a white cloth before their beasts, to try to frighten them, and had then rushed in. They had a tussle, and my men scampered off, with the loss of a few trifles.

The position of our camp was excellent for the defence of our animals, though it had not been selected with any such view. We had a torrent on the N. side, and a narrow but deep fissure (quebrada) on the S. These two united towards the E., and our camp was placed on the W., the only side upon which anyone could enter. To seize the beasts anyone must necessarily pass the camp. Kept awake till past midnight, and then roused Louis to keep watch for an hour; but before his time was half over he was snoring so loudly as to awaken me, and I determined to trust the watch to no one but myself. At 2 A.M. heard whistling and low voices of persons approaching; instantly jumped up and aroused the others, blew my whistle, and shouted to the thieves to come on. Apparently they thought better, and went off. Night being very dark, we saw no one. After this my people considered that it might be as well to keep watch, and I went to sleep. A windy and rainy night.

June 27. From Camp near the High Road to Camp on the South Side of Carihuairazo.—At 8.15 A.M. a muleteer from Machachi came in and told us that last night he had had eleven beasts stolen from him on the other side of Chuquipoquio. Clouds were very low down on the mountains, and I was perplexed. If we went up we should see nothing, and if we remained below we were liable to the annoyances just described. The extreme inconvenience to which we should have been put by the loss of our beasts (and consequent loss of time) decided me to abandon the measurement and to move upwards out of the reach of the blackguard owner of Chuquipoquio. At 1.30 P.M. we broke up camp, and proceeded up the valley between Chimborazo and Carihuairazo, called Yacularca. At 4.30 arrived opposite the junction of a small valley leading towards the summit of Carihuairazo, and went up it, encamping at 5.30 at a height of 13,377 feet. Very swampy and soft ground in this neighbourhood. Pitched the tent in a little clump of trees in the middle of the valley. Violent wind at night with a min. temp. of 33°.

„ 28. *In Camp.*—The weather utterly prevented a move upwards. Rain, sleet, and hail fell unceasingly from midday until 8 P.M. For a short time we saw the

stars, and then rain and snow recommenced and continued nearly all night. Prepared for an early start to-morrow, and determined to employ the Sara-Urcu tactics. Cut bundles of branches and twigs to mark the line of ascent.

June 29. Ascent of the Western Peak of Carihuairazo.—Started at 5.50 A.M. with the Carrels, David, and Campaña. The two latter were taken as I intended to try to get them up Chimborazo, and it was advisable to exercise them on snow beforehand. Rigged them out in some of our boots and socks, and made gaiters out of tarpaulin. Also had a volunteer, in the shape of a dog, which had followed us from Penipe. Tried to drive it back to camp, but it persisted in following us, and went to the top of the mountain.

During this expedition we did not see the summit until we were upon it, and seldom saw anything distant more than 150 feet. Got into deep new snow soon after leaving the tent, and made the entire ascent over snow. Steered by the compass, aiming for the highest point, and marked our track by sticks about every 200 feet.

Commenced by going up the hills to our W., and steered a N.W. course over them until 7 A.M., when we came to the ridge leading from Carihuairazo towards Chimborazo. From our reconnaissance in January last we knew that this ridge led towards the summit at which we were aiming. Course along it was N.N.E. Impossible to protect the eyes, and even without spectacles it was difficult to make out the footsteps. At 7.25 came to a steep bit like the final arête of Monte Rosa and roped. Ridge then died out, and we entered on a glacier which surrounds the final peak. The little crevasses were quite snowed up, and the big ones looked immense, looming through the fog. Glacier became steep, and steps had to be kicked as well as cut. Two or three large snow bridges were passed, and called forth exclamations of wonder from the Ecuadorians. The wall in front steepened until it became nearly or quite as rapid as the final slope of the Wetterhorn.

The dog wanted to give in at this point, and sat down and whined. Handed it up from one step to another. By a stroke of good fortune stumbled on

a snow bridge over the highest bergschrund. Too steep now to go straight up—the steps would have broken one into another. So we went up cunningly, over snow of admirable quality, letting itself be bent and beat about without giving way. Gigantic cornice loomed through the fog, indicating that we were approaching the summit. Another consultation, ending in going straight ahead, and again fortunately hitting off the most assailable part. In five minutes more we were assembled on a little snowy cone, which fell away in all directions, and peering into the unfathomable mystery of the depths at our feet. Arrived on summit at 10.35 A.M. (16,500 feet).

Temp. on summit ranged from 38° to 40°. The readings of the mercurial barometer giving much lower altitude than that assigned by Reiss and Stübel, and also less than I expected, I told the Carrels that I suspected we were not on the highest point, but so far as we could see there was nothing higher. Left summit at 11.45 A.M.; came down fast; never lost sight of the sticks we had planted (though in many instances they were nearly snowed up), and got to camp at 2.5 P.M., without halting. At 4 P.M., just as we were sitting down to dinner, the clouds opened, and we saw that we had been on the western peak of the mountain, which is distinctly lower than either of the eastern ones, which are apparently those measured by Reiss and Stübel.* A few hours later we were all (including the dog) on our backs, incapacitated by snow-blindness. It was piteous in the extreme to hear the Ecuadorians wailing under their little booth of branches; for, not knowing what had befallen them, they imagined that they had lost their sight for ever.

June 30. At Camp on Carihuairazo.—Unable to move because of snow-blindness.

July 1. From Camp on Carihuairazo, across Abraspungo, to Fourth Camp on Chimborazo.—J. A. Carrel and Campaña were the worst attacked on this occasion, but all were able to move to-day, and we broke up camp at 10 A.M., descended to the bottom of the valley, and then crossed the depression called Abraspungo (14,480 feet), which is a col connecting

* They assign 16,752 and 16,641 feet to these two points.

Chimborazo with Carihuairazo. There is a mule track (which does not appear to be frequently used) all the way across, leading in many places near or over very boggy ground. Arrived at col at 1.10 P.M., and left it at 2. Bore gradually round to the left until our course became S.W. by S. Stopped at 3.45 P.M. to collect wood, and encamped a few minutes later on the W.S.W. side of a huge lava-stream, close to a small torrent. This was one of our most comfortable camps (14,360 feet). Plenty of firing, good shelter, and a charming situation. Humming birds and butterflies fluttering all around us. The highest point of Chimborazo bore S. by E. from this camp. Photographed both mountain and camp, and collected actively. Min. temp. in night 30°.

July 2. From the Fourth to the Fifth Camp on Chimborazo.

--We continued the tour of Chimborazo, mounting higher as we progressed; and encamped, at a distance of about $2\frac{1}{2}$ miles from the fourth camp, against a huge block of trachyte (15,950 feet). All firing was brought up to this place. There was nothing for our beasts to eat; so they, with Cevallos and Domingo, were sent downwards, and went very low indeed, out of sight. We camped early in the day, and spent its latter part in perfecting arrangements for a second ascent of Chimborazo. Shelter was rigged up for David and Campaña, as the tent did not comfortably accommodate more than three persons besides the instruments and other valuables.

- „ 3. *The Second Ascent of Chimborazo.*—Min. temp. in night 25°; temp. at 4.30 A.M. 30°—before which time we were astir. Started at 5.15 A.M., with two Carrels, David, and Campaña, leaving the camp to take care of itself. Made for the ridge descending from the second summit towards N.W. by N. The morning lovely; Cotopaxi and Illiniza, more than 60 miles away, seen clearly. Cotopaxi at this time not smoking at all. In a short time a strong and very cold wind sprang up. Felt it severely, and stopped to beat hands and feet. Whilst doing so saw commencement of eruption from Cotopaxi. Column of inky black smoke rose with immense rapidity 20,000 feet above the lip of the crater; was then caught by an easterly wind, borne at right

angles to its former course; then was taken by a northerly wind and carried down upon us. The others had progressed so steadily that I did not catch them for nearly an hour. J. A. Carrel carried mercurial barometer, Louis the photographic apparatus, David the food, Campana the etceteras, and I the theodolite and thermometers. Course at first was very direct along the crest of the above-mentioned ridge, and scarcely deviated at all from a straight line towards the second summit. Almost entirely over snow and stony débris. Angle moderate, and footing generally good. From 6.50 A.M. onwards course was entirely over snow. Roped up at this time. Ridge came to a termination against precipice at 8 A.M., and we then bore to the right, to a little patch of rock. Got there 8.35, and then breakfasted. Height 18,920 feet, or more than half way up from the tent to the summit in a little more than 3 hours. Went on again at 9.5 A.M., at this time distinctly seeing the sea through openings in the clouds, and a wonderful prospect over the country to our west. Snow deepened after this, and we did much zigzagging, on the whole bearing round to the right, i.e. to the south. At 11 A.M. David, being very much exhausted by floundering in the snow, wished to return. Refused to allow it. About 11.30 A.M. we were facing Guaranda, and struck our former route. Thence the two routes became identical. Steepest angles were at this point, and none probably exceeded 35° . Made, as before, for the plateau between the two domes, bending round to the north, and for the last part of the way to the east. Snow soft here, but not nearly so soft as on first occasion. Sank, however, up to the knees. Did not go on the second summit, and kept in the hollow between the two, until close under the highest point on the Riobamba (or eastern) side, and then went directly up to it. At 1 P.M., when close to the very highest point, we saw that the regular sweep of the snow on the apex of the dome was interrupted by something. At 1.20 arrived on the summit, and a grand clamour and cackling broke out amongst the men, for there was our flag-staff, still standing about 4 feet out of the snow, with tattered remnants of the red flag attached, and in connection with it there was the singular circumstance

that Nature had built a wall of ice on the eastern side, as if to protect it. This wall was six or seven feet long and two feet thick, and rose to the level of the top of the pole. We could scarcely have built it ourselves with greater regularity. The pole stood clear of it in front.

The ash which Cotopaxi had been vomiting out since 5.40 A.M. did not commence to fall on the summit of Chimborazo until shortly after our arrival, but it fell during our brief stay to such an extent as to blacken the plateau all over, so that it lost all resemblance to snow and looked like a ploughed field. This ash was wonderfully fine, and penetrated everything, filled the working parts of instruments, rendered photography a failure, and almost prevented us from eating, as our mouths became filled with grit directly we opened them. *Thus our last ascent in Ecuador, like the first one, and all intermediate ones, rendered no view from the summit.* Extraordinary and ghastly effects in the sky. Natives beginning to murmur about the effect of the eruption on Machachi and of no food for their beasts. When barometer was first set up, temp. was 20° Fahr. It fell as low as 15°. Strong wind from the north-east, which felt bitterly and dangerously cold. Had to stop in our operations incessantly to beat hands and feet. Having been slightly frost-bitten on the first ascent through handling the barometer screws, set the scale beforehand to about the point to which the mercury was expected to fall. It read 14.028 inches with temp. 15° Fahr.

Left summit 2.30 P.M. and descended quickly, in following order: Louis first, then David, Campaña, self, and J. A. Carrel. Campaña slipped about badly, but being a very light weight did no mischief. Ash from Cotopaxi continued to fall during the whole of the descent, and we found it fortunate that we had here (as on Sara-Urcu and Carihuairazo) planted sticks to mark the line of ascent. Unroped on quitting snow. J. A. Carrel and self went down faster than the others, arriving at camp at 5.10 P.M., and found the tent not only covered but filled with ash. Everything had to be taken out and beaten and shaken. This was the most notable day's mountaineering I have had. Everything was car-

ried out without a hitch and with precision. It was our last ascent in Ecuador.

- July 4. *From our Fifth to our Sixth Camp on Chimborazo, near Tortorillas.*—Waited to get angles and do other work, and left at 11.55 A.M. to continue the tour of Chimborazo. Steered N.W. (or away from the summit) until 12.35 P.M., and then bore round to S.W., S.S.W., S., and at S.E. by S., until we struck the valley up which we had gone when passing from the first to the second camp. At this time of the year we found the streams in it were quite dried up, and so we went down it until we found water, near Tortorillas. The house at this place being very filthy, the Carrels and I camped in the tent, about three-quarters of a mile away (13,350), but all the rest of our people went to the tambo.
- „ 5. *From Sixth Camp on Chimborazo to Camp about three miles beyond Chuquipoquio.*—A squally night and snowing in the morning. Waited a long time to get angles, and then went by the Quito track through Tortorillas to Chuquipoquio and about three miles beyond, encamping on the ground we had occupied on June 25–27. Got away at 11.45 A.M. and arrived at camp at 5.35 P.M. Took photographs at Tortorillas.
- „ 6. *From Camp to Riobamba ; measurement on road, &c.*—Packed at an early hour and despatched Louis, with David, Domingo, Cevallos, and the greater part of the beasts, to Riobamba, and then continued measurement on the high road by the aid of J. A. Carrel and Campaña, right back to the tambo at Chuquipoquio. We got at nightfall to Riobamba, and rejoined the others.
- „ 7. *At Riobamba.*—Packing for the journey to Guayaquil. Found that several of our beasts were unfit to go further, and vainly tried to replace them by others. Only succeeded in getting one animal, and had to trust two loads to an arriero, who was going by the ordinary route. We ourselves intended to proceed by what is termed the railway route. This was the only occasion during the journey on which we separated from any important part of our baggage, and doing so cost me a fortnight's detention at Guayaquil, as the loads had not arrived when we got there.

- July 8. *From Riobamba to the Village of Nanti.*—Started for the last journey at 2.30 P.M., intending to reach the town of Guamate. Could get no further than Nanti, and stopped in a small house at the upper end of the village (10,670 feet). A death in the family occurred during the night, and I was awake by requests for candles, as there were none in the house, and no means of getting a light.
- „ 9. *From Nanti through Guamate to Camp near the Hacienda of Galti.*—Got away at 5.15 A.M. It was now evident that we should reach Guayaquil in time for the steamer to Panama on the 13th only by a desperate struggle. Arrived at Guamate by 11 A.M., not having halted by the way. We had been told at Riobamba that this place was only four hours distant. Stopped a short hour to eat, and went on almost without a halt until 5.30 P.M., and then camped a little distance beyond the Hacienda of Galti (11,772). The road this day was over very undulating ground, and rose almost as high as 12,000 feet. Country extremely dismal and uninteresting. We met scarcely any people, and those we encountered gave the most contradictory reports of distances. Min. temp. at night, 39°. Bitterly cold wind.
- „ 10. *From Camp near Galti to Camp in the Forest about two hours above the Hacienda of Cayandeli.*—Left camp at 7.15 A.M., being much alarmed at the statements made to us that it would still take 2½ days to reach the railway. Passed town of Alausi, on the left bank of our valley, at 11.40 A.M. Stopped for 55 min. to eat, and then by advice of a native left the track we had been following, and tried to take a short cut across country. Crossed ridge after ridge of a most perplexing district. The course changed every few seconds. Mountains entirely in clouds. At 5 P.M. we came to what appeared to be the final descent towards the sea, and at this point there probably should have been a very fine view, but, as usual, haze covered everything we wanted to see. We could only make out that the descent was very rapid. Forest commenced about 500 feet down, and continued without intermission right down to the level of the sea. Went down as fast as possible, and encamped alongside the track at 7 P.M., through

inability to see anything in the dark. Had neither water nor anything of any kind to drink. Had not seen a house or a person since passing Alausi at midday.

- July 11. *From Camp in the Forest to the last Camp, near the Bridge of Chimbo.*—Heard voices in the night, and discovered a party of arrieros encamped about half an hour below, and learned from them that the nearest water was a good hour still further down. This we found was correct. Started at 7 A.M., and passed the hacienda of Cayandeli at 9. The descent was one of the most rapid I have traversed. From 7 to 9 A.M. the barometer rose $3\frac{1}{2}$ inches. Very few persons were met with, and such as we came across gave the most contradictory information about distances. Continued moving until dusk, and then camped, not knowing whether we were near the end of the railway, or still a day's journey from it. The barometers gave us a better clue as to our whereabouts than any information we received.
- „ 12. *From Camp near the Bridge of Chimbo, and by the Railway to the Town of Yaguachi.*—In the night made up accounts with my people. Got beasts loaded by 5.30 A.M., and then sent out Campaña in one direction and Cevallos in another to learn whether we were on the right track. They reported that we were one hour from the railway, and we proceeded at once at our most rapid pace, and arrived at the bridge at 8.15 A.M. The rails came to an abrupt termination on the right bank of the river Chimbo. There was no station, no train, and no person visible. Sent out my people in various directions in quest of information, and found that a train might be expected about midday. If it did not come to-day, perhaps it would *mañana*. This was a great butterfly locality, and we captured 12 species whilst waiting. Train came in sight soon after midday. We were the only passengers, and our baggage was the only freight. The driver of the locomotive was an Englishman. Arrived at Yaguachi at 6.45 P.M., having lost an hour and a half through the locomotive running off the track.
- „ 13. *Arrival at Guayaquil.*—Got to Guayaquil before daylight, and found the steamer for Panama had not arrived. Found also that the two loads despatched

from Riobamba, and two boxes which had been sent from Quito, had not turned up. Determined to dispatch the Carrels to Europe alone, and to wait until the baggage was recovered. Steamer came in at midday. Arranged money matters with the Carrels, and paid them 60*l.* on account. Took a room for them at the hôtel called 'Nueve de Octubre,' and instructed them to be ready to go on board at 8 A.M. to-morrow. Slept at British Consul's.

July 14. *At Guayaquil. Departure of J. A. and Louis Carrel for Europe.*—Went to the hôtel at 7.45 A.M. to ship the Carrels, and heard that J. A. Carrel and Campaña had not been in all night. After many inquiries discovered both locked up in the central police station, as they had been found in the streets at an early hour of the morning in altercation. J. A. Carrel had lost the whole of the money paid to him yesterday (40*l.*). Extricated him with difficulty, and shipped both just in time to save the steamer.

„ 15-28. *At Guayaquil, &c.*—The goods from Riobamba came in in the course of a week, but the two boxes from Quito were still missing. Went on the 23rd by steamer to Bodegas in search of them (without result), and returned to Guayaquil on the 25th.

„ 29-August 2. *From Guayaquil to Panama on board the 'Ilo.'*

August 3-4. *At Panama.*—Made excursion to Old Panama with the acting British Consul.

„ 5. *From Panama to Colon by the Panama Railway.*—The Panama railway authorities were on bad terms with their porters, and passengers consequently suffered. The whole of my heavy baggage was detained at Colon.

„ 6-28. *From Colon to Southampton on board the 'Moselle.'*—Arrived in London 8.30 P.M., and received baggage by following steamer.

NOTE.—The height given on page 54 (and corrected on page 184) as the elevation of Chimborazo is that assigned by Humboldt. Mr. Whymoor's observations, however, reduce it to 20,517 feet.

AN ADVENTURE ON THE AIGUILLE DU PLAN. By J. BAUMANN. (Read before the Alpine Club, April 5, 1881.)

THE Aiguille du Plan (12,051 feet in height), the scene of the following adventure, is an important feature in a range of rocky precipices which rise abruptly above the S.E. side of the valley of Chamonix. From a picturesque point of view they are to my mind surpassed by none in the Alps, and from the climber's point of view they possess the rare merit of having as yet resisted all attempts to scale them. All their most prominent summits have, it is true, been taken in flank, but the N.W. wall of rocks still affords a splendid field for enterprise to those who take pleasure in difficult rock climbing.

On my arrival at Chamonix, in August 1880, I found my friend Cullinan's guide, Andreas Maurer, at my disposal. Cullinan was to have come out with me, but was detained in England by the unusually late sitting of Parliament.

My guide, Emile Rey, was suffering from the effects of two nights' severe exposure during an ascent of Mont Blanc from the Glacier du Brouillard, and was consequently not yet available for active service. I had promised Cullinan not to woo any of the virgin peaks on which we had set our hearts until he could join me, so that I was rather puzzled how to employ my time in the interval. One afternoon, whilst examining the Aiguille du Midi, I recollected the great interest with which I had watched Messrs. Dent and Maund during their splendid attempt on its N.W. face in August 1879—an attempt which would undoubtedly have been crowned with success had they not been forced to take to the southern side of the final rocks in order to escape the fury of a sudden and violent storm. From the Midi my eyes wandered to the rocks of the Plan. On comparing the two peaks it struck me that the latter did not present a much more formidable appearance than its better known neighbour, although in all conscience both looked sufficiently forbidding. But the experience of all climbers proves that the effect produced upon the imagination by apparently inaccessible precipices is frequently the sole reason for their remaining untried; one cannot decide upon the practicability of rocks until they are actually within one's grasp; and as for snow and ice slopes which look almost perpendicular when seen from below, one knows that the laws of gravity fix the highest angle at which they can lie.

In short, I assumed, perhaps too hastily, that, because I had often been before imposed upon by appearances, therefore

everything was possible; and difficult though it looked, I was resolved to try conclusions with the Aiguille du Plan. Maurer, always ready for an adventure, accepted the idea with alacrity and spent a long time examining the face of the mountain through Couttet's telescope, but, unlike myself, the more he looked the less he liked it.

In order to obtain a better view of the lower rocks and to make a rough sketch, on which to mark the most likely looking line of ascent, we strolled up the slopes of the Brévent. Seen from here the range looks even steeper than it does from Chamonix. A broken wall of rock crowned with towers faces you with sharply defined outlines; here and there excrescences in the shape of icefalls and patches of snow cling to it in a marvellous way; and nestling immediately at its foot lies the hamlet of Chamonix. Strange, I thought, that, when mountaineers are sighing for fresh worlds to conquer, and lamenting that every peak has been climbed, this rock-wall lying closer to a great climbing centre than any I know should never have been attempted. Of course the summit of the Plan had already been reached by Mr. Eccles in July 1871, but he had started from the Glacier du Géant, on which side the shape of the peak is entirely different, and this fact did not in the slightest degree lessen the pleasure and excitement which I hoped to derive from a tussle with these tempting-looking crags. Having once determined to try the Aiguille du Plan, I fell into that restless and excitable frame of mind which generally accompanies the resolve to accomplish something of which one cannot precisely gauge the difficulty, and chafed at the enforced inaction caused by Rey's indisposition. He, poor fellow, was still looking the picture of misery, limping about Couttet's garden with blood-shot eyes and swollen lips.

The weather was all this time brilliant—too brilliant in fact, for the neighbouring peaks looked treacherously near, and the rays of the sun produced that biting sensation which the weatherwise always regard as an indication of sudden change.

Anxious to set at rest a doubt which had arisen in my mind as to the possibility of even reaching the lower rocks of the Plan, I started with Maurer, on August 14, for the Châlet de Blaitière, with the intention of passing the night there. The night being fine and the châlet dirty, we preferred, however, to camp out on the grass slopes a little higher up. The next morning we rose betimes, and after an hour's scramble over moraine and rock *débris* reached the Glacier de Blaitière. The pyramids of the Aiguille de Blaitière and the furrowed cliffs of the Plan now towered directly over us, descending in an almost

unbroken line several thousand feet straight to the glacier on which we stood, silently admiring their simple grandeur.

But how to climb them? One thing was certain: the smooth glacier-worn rocks which form the base of the Plan were impossible. These rocks are crowned by a steep ice-wall, which is traversed by an immense gap, the result of a displacement of the whole mass of ice. To reach the actual Aiguille du Plan it was obvious that this ice-wall must be crossed diagonally, and in order to reach the ice it would first be necessary to attack the laminated rocks at the foot of the Blaitière.

We were still some distance from these rocks (at a height of about 7,000 feet), and seen through the telescope they looked as though they might 'go.' Another hour and we were on them. Good rocks they turned out to be, affording slight but sufficiently safe hand and foot hold. We crossed them transversely until further progress was barred by a smooth, almost perpendicular slab of rock against which the ice-wall abuts, and, no longer finding sufficient support, breaks up and falls in confused masses on to the glacier below.

We saw that the ice-wall above us might be reached by cutting steps up a jagged knife edge of ice, which appeared to be the only connecting link between ourselves and it. But we had spent much time in examining our peak from the glacier, and the sun was already sufficiently powerful to render the rotten ice unsafe, so, having attained the object of that day's reconnoitring expedition, and found a way from the glacier on to the Plan, we returned to Chamonix in high spirits and full of confidence. Two days later Rey reported himself fit again and ready to accompany me anywhere. We accordingly busied ourselves with the usual preliminaries for a mountain expedition, and requisitioned the tent which Dent had kindly left in Couttet's charge the previous year 'pro bono publico.' During the afternoon of August 16, in brilliant weather and under a hot sun, we slowly toiled up the grass slopes leading to the Plan des Aiguilles.

We were quite an imposing caravan. Davidson, Eccles, and Frank Hartley, with their respective guides, bent on having another try at the Aiguille des Charmoz, accompanied me as far as the Châlet de Blaitière, and besides Maurer and Rey I had two porters to carry the tent, blankets, &c., to the site I had fixed upon at the foot of the Glacier de Blaitière.

By the time we had reached the châlet the sky had clouded over; big drops of rain fell at intervals, the wind rose, and a night in the tent did not seem a cheerful prospect. Soon after

we left our companions the rain came down in torrents, and we thought it best to pitch our tent whilst still in the pine region, make a big fire, and dry ourselves if possible. After a most unpleasant night I was nothing loth to return to Chamonix for breakfast, leaving Maurer and Rey to carry the tent higher up. The morning was bright and the air crisp, but heavy clouds hung sulkily along the Aiguilles Rouges, and the wind being in the wrong quarter, I resigned myself to the prospect of further delay. During dinner, however, the wind changed to the N.W., a gorgeous sunset lit up the Mont Blanc range, my spirits revived, and life assumed rosy tints, reflected perhaps from the setting sun.

In this frame of mind I determined to go for my peak then and there. The guides were taken aback at the unusual time of day for making a start, suggested that, as we had waited so long, we might at least wait until the next day, hinted that the weather was unsettled and that the provisions were not ready. But I would not listen to their remonstrances, and announced my resolve to start for the Plan that night. On August 18, shortly after midnight, we accordingly set out by bright moonlight, and soon gained the plateau which crowns the grass slopes. At 3 A.M. we arrived at our tent; the moon had disappeared behind Mont Blanc, and it was now pitch dark, the darkness which precedes the dawn. Perhaps still chafing at the abruptness of our departure from Chamonix, or impressed by the difficulty of the task which lay before them, the guides were not in a talkative mood. After preparing our coffee and smoking our pipes in silence, we emerged from the tent at 3.30, and directed our steps by lantern-light towards the glacier, which we reached in about half an hour. It was now sufficiently light to dispense with the lanterns. We once more traversed the rocks of which I have before spoken, but this time their difficulty was increased by the slight glaze of ice which covered them.

At 5 A.M., with a shout of exultation, Maurer struck his axe into the great ice-wall which confronted us, and our serious work commenced. The first steps were decidedly nasty. The broken ridge by which we hoped to attain the main mass of the ice-slope was very narrow, very steep, and in a somewhat disintegrated condition. Having traversed this ridge, we reached the ice-slope, and found it about 800 feet wide, shelving steeply down to smooth rocks. Cross this we must, or else turn back.

We had provided ourselves with three Club ropes, each ninety feet in length; these we joined together and roped our-

selves. A very unusual length of rope to use in traversing a long steep slope, you will say, but we wished that one at least of the party should always be in as safe a position as circumstances would allow, and the longer the distance between each man the greater the chance of attaining this end. Rey planted his axe almost up to the head in a friendly fissure, and wound the rope round it, whilst Maurer commenced the arduous task of hewing big footsteps in the ice. Each step took several minutes to cut, which gave me ample leisure to admire the magnificent rock masses with which we were about to do battle. At length we reached the bergschrund, and great was my relief when Maurer's broad features expanded into a smile, and with a cheery 'Es geht' he swung himself into its depths. In about ten minutes he reappeared on the other side. Had the schrund proved impassable our expedition would have been nipped in the bud, but this barrier overcome, we with overweening confidence considered our peak as good as won. Our assurance was based on the observations we had made from below, which left us under the impression that the greatest difficulties of the expedition would be encountered at the outset. The rest appeared to be merely a matter of hard climbing and step-cutting. After events proved how delusive were our hopes. The difficulties steadily increased as we ascended. So confident were we of success after the passage of the schrund, that we went the length of sacrificing some of our wine in order to lessen our impedimenta. Before resuming the work of cutting up the ice-slope I took the opportunity of having a peep at Chamonix through my glasses. Our friends at Couttet's had moved the telescope from its customary perch to a more convenient spot for observing us, and little knots of people had assembled round the big telescope in the streets of Chamonix, evidently watching our movements. We must have afforded them plenty of amusement and mild excitement.

The art of climbing was represented in all its phases by our acrobatic performances, some of which were, I feel convinced, not of a very graceful nature. At the head of the ice-slope is a long knife-like ice arête, which had to be passed by a sort of straddling process. The first man, Maurer, received a helping shove with my ice-axe from behind; the second a pull and a shove; while Rey's ascent, much to his disgust, was deprived of all dignity by the vigorous hauls of Maurer and myself. At the end of our cold ride we found ourselves at about 9 A.M. on a big knob of smooth rock, up which we wriggled, only to find a succession of similar knobs, varying in size and

steepness, all of which required much sprawling, hoisting, and striving before they were topped. Rather stiff work this, but what next? Utterly impossible precipices to the right, walls of ice to the left, and rocks immediately facing us, split up into a number of gullies running parallel to each other, and mostly coated with ice, reminding me of the big couloir on the Dru. None of these looked inviting, but by shifting our position slightly we caught sight of a *cheminée* deeper than the rest, up which Rey volunteered to go. Fine cragsman though he is, he found it no easy task. The *cheminée* is perhaps forty to fifty feet long, its sides are unpleasantly smooth, and scarcely the width of a man's shoulders. He 'kneaded and elbowed' his way up in grand style. In the event of a slip we could have done nothing to break his fall. Maurer looked on approvingly, and when it came to his turn to swarm up did not disdain to make use of the rope which Rey dangled down to him. Out of breath from our exertions, we welcomed a friendly ledge of rock, which afforded us the last opportunity for resting and eating which presented itself. But little wine remained to us. The tin which Rey carried had been broken on a sharp projection of rock. 'Vorwärts' was now again the word.

More difficult rocks, more steep ice-slopes, until at two o'clock in the afternoon we reached the foot of a big triangular rocky mass, which is a conspicuous feature on the face of the mountain. From this point we could see the sharp outlines of the Blaitière still high above us, proving to us that we were much farther from the summit of the Plan than we had imagined, and that our expedition would, therefore, be a much longer one than we had bargained for. This conviction came upon us all of a sudden. Hitherto all our energies and thoughts had been concentrated to such an extent upon overcoming the successive difficulties which we encountered that no one asked, 'How far may we be from the top?' Besides, none of us could tell, and our one absorbing idea now was to attain some point from which we could effect the comparatively easy descent down the southern slopes of the Plan. This appeared an imperative necessity. To retrace our steps would, we thought, involve a considerable amount of danger, and it was still far from our thoughts that we might have to incur this risk. Yet with the fact staring us in the face that it would take at least another three or four hours to reach the summit, I for one began to have an unpleasant suspicion that matters were taking an awkward turn. The question now arose as to the direction which we ought to take. Maurer asserted that he had noticed from below a ridge to our left

which appeared to lead to the top, but Rey and myself felt convinced that our route *must* lie to the right, and that we had better strike off in that direction. Maurer's confident attitude prevailed, however, and bearing to the left we continued our toilsome climb. Looking back, I am still doubtful whether we should have fared better or worse by bearing to the right. If the Aiguille du Plan is ever climbed by its N.W. face, the route will undoubtedly lie to the right of this rock, but if we had started in that direction so late in the afternoon, the probability is that we should have been compelled to pass the night in a thoroughly exposed position, possibly with disastrous consequences.

I will not weary you with the details of our ascent from this point. The line we took will, I think, never be followed by anyone. Suffice it to say that after three more hours of almost continuous ice-cutting, varied occasionally by nasty bits of glazed rock, we arrived (seventeen hours after leaving Chamonix), tired and cold, at the end of that day's labours. Further progress was impossible. Maurer's arête, leading straight to the top, had no existence except in his imagination. In its stead we found ourselves stranded at the foot of a lofty tooth in the N. ridge of our peak, with a long line of utterly impossible crags between ourselves and the spot where we now knew the summit must be. Those amongst you who have ever, under similar circumstances, found themselves suddenly face to face with the crushing conviction that all their exertions have been in vain will sympathise with the bitterness of my disappointment. The whole position flashed upon me. We must spend the night where we were. But what a prospect! We had attained a height of about 11,500 ft.; shelter there was none; our stock of provisions was low; we had with great imprudence drunk the small quantity of wine we had left, reckoning upon finding water during our descent on the other side. The weather looked threatening, and if it should become really bad, I shrank from deliberately measuring what might follow. 'C'est une jolie position!' said Rey. 'Teufel!' muttered Maurer. My own expression was not parliamentary. Strangely enough, at the very moment that we were cowed by the hopeless aspect of affairs, a volume of heavy clouds rolled down, and hid Chamonix from our view. The sound of the bells tolling for vespers was very weird, and seemed of evil portent. For a few moments we stood irresolute, then crawled to the brink of the ridge and peered over. Our last hope was gone, for the rocks descended in sheer smooth precipices many hundreds of feet down towards the Glacier du Géant.

There was fortunately a cleft in the rocks on the other side, into which we packed ourselves. We then cut three flat places in the ice on which to stand, fixed the end of our rope to a projecting knob of rock to prevent ourselves from slipping over the edge of the precipice, and tried to resign ourselves to circumstances. To be benighted high up on a mountain is not an unusual occurrence. It is a contingency which one ought to be prepared to face, specially on the occasion of a first ascent; but in our case the situation was aggravated by well-grounded fears, and I must confess that I felt despondent. All sorts of gloomy forebodings forced themselves on my mind. If fresh snow fell, which the state of the sky warned us was by no means improbable, our steps would be obliterated, the rocks would be glazed with ice, and our retreat would be cut off. Cloud-like mists were chasing each other with fantastic energy, chilling us to the marrow, and I feared that we should not be able to withstand their numbing influence through the long watches of the night. There we stood back to back, our teeth chattering with cold—ceaselessly stamping our feet and clapping our hands until the movement became almost mechanical. We rarely spoke; each was too much occupied by his own thoughts, and when we tried to cheer each other up, our voices had an unnatural tremor, due to our chilled and exhausted condition. I lost count of time, but I think that it must have passed more quickly than one would imagine. The one feeling which prevailed above all others was an intense desire for warmth. The mind seems to lose its proper balance when the body is subjected to severe physical discomfort; and instead of preparing for my end, and recalling my past sins, I found myself regretting that I had not managed to extract more enjoyment out of life whilst it lasted. I am afraid that I did not rise to the gravity of the position. ‘Pigmies, though perched on peaks, are pigmies still,’ and, try as I would, I could not fix my attention on serious subjects, but strayed away into aimless speculation as to whether the guides reproached me for bringing them on such an expedition, or into computation of the number of steps we had cut to reach these grim solitudes. Then I believe I dozed occasionally, and awoke every now and then with a start out of pleasant dreams, perhaps of some cosy fireside, to find myself still on that infernal ledge. But all things must have an end. The dawn came at last, and our spirits rose again. After all, were we not still safe and sound?

Cold, stiff, and thirsty, it is true, but the weather had held up through the night, and with care and patience we hoped

to be able to retrace our steps. At 5 o'clock A.M. we nerved ourselves for a start, and began our descent. One never knows what one can accomplish until one is put to it. We were obliged to descend places which the day before we had pronounced impossible to descend, and the impossibility vanished. About eight hours after leaving our uncomfortable night-quarters, the recollection of which will not easily fade from my memory, we eagerly clutched the rocks of the Blaitière once more. Our dangers were over, and, what was of even greater importance to us at that moment, we could slake in long, copious draughts of water the burning thirst which we had endured for twenty-one hours. One of the many charms of mountaineering consists in the sharp contrasts which it affords; sudden changes from hope to despondency, from privation to luxury; light and shade alternate quickly and frequently. A voluptuous languor stole over my senses as I threw myself down on a mossy bank outside our tent, amply rewarded for all the privations I had undergone by the delightful repose which comes only to those who have earned it.

Before concluding I should like to add a few remarks about the ascent of the Aiguille du Plan from the southern side.

The first and, up to the year 1880, the only ascent of the Aiguille du Plan was made in July 1871 by Mr. James Eccles, with his guides Michel and Alphonse Payot. No account of the ascent has ever been published, and under these circumstances the following short note of his expedition (with which Mr. Eccles has been good enough to favour me) will doubtless be interesting to members of the Club.

Mr. Eccles says:—

I have no memoranda on the subject of the Aiguille du Plan, and have to rely entirely on recollection. I do not even remember the exact date, but I believe it was early in July 1871. In 1869 I made an attempt, but lost my way and found myself wandering near the foot of the Aiguille du Midi, having gone a great deal too far up the Glacier du Géant.

In 1871 I passed the night on the Glacier du Géant near the Petit Rognon (possibly from a wish to make myself unnecessarily uncomfortable), and next morning started about 3 A.M. We kept as much as possible along the spur of which the Petit Rognon is the extremity, and, after passing the second ice-fall of the lateral glacier which descends from the Aiguille du Plan, arrived at a moderately steep snow slope which led to a curiously curved snow arête, at the further end of which appeared our Aiguille. On arriving at its base, we passed over to the Chamonix side, and after five or ten minutes' easy climbing arrived at the summit, as far as I can recollect, a little after six o'clock.

Certainly the time from the Rognon was not more than $3\frac{1}{2}$ hours, and there was not the least difficulty during the ascent.

It is difficult to account for the fact that so fine an expedition remained not only unrepeatd, but unattempted (so far as I am aware) until the early summer of 1880, when Mr. Yeld slept out upon the slopes above the Lac de Tacul and thence attempted to reach the summit. He was, however, defeated by the uncertainty of the weather in the morning and by the unfavourable state of the snow on the final slope of the mountain, which rendered further progress dangerous. The next attempt was on September 2 in the same year, when a large party, consisting of Messrs. H. Seymour Hoare, W. E. Davidson, Frank Hartley, and myself, with our respective henchmen, Von Bergen, Jaun, Maurer, and Rey, left the Montenvers at 4 A.M. to make the second ascent. But we, too, were on this occasion doomed to failure, for, owing in the first instance to a serious misunderstanding between Davidson and Mieulet's map, we entirely missed the proper route, and were eventually obliged to return to the Montenvers 're infectâ,' after many hours of most exciting though fruitless climbing up a steep couloir, in the course of which the whole party narrowly escaped a violent death by the displacement of a huge boulder, ending up with a race against nightfall through the séracs of the Géant. Our many and various adventures on that memorable day are well worthy of more lengthy mention, but I have already trespassed too long upon your indulgence and must therefore leave that task to abler hands. Two days later we again started from the Montenvers, about an hour before dawn, and on this occasion, profiting by our previous experience and favoured by most magnificent weather, we reached the summit of the Plan at noon. The expedition when taken from the Montenvers is undoubtedly a long one, though the difficulties—once the proper route is hit off—are small. The magnificence of the ice scenery above the Petit Rognon more than repays the monotonous toil of the early hours of the morning, and the view from the summit on a cloudless day will not be easily forgotten. In fact, the expedition can confidently be recommended to anyone with a stout pair of legs and a long summer's day at his disposal. An early start from the Montenvers is advisable, unless, indeed, the rather alarming alternative of sleeping on the bare ice beneath the Petit Rognon be adopted.



EXPLORATIONS AMONGST THE COTTIAN ALPS.

2. Monte Viso.

(Read in part before the Alpine Club, March 1, 1881.)

By the EDITOR.

‘Of Saluces the contre,
And of Mount Vesulus in special,
Wher as the Poo out of a wellle smal
Taketh his firste springyng & his sours.’— *Chaucer*.

THERE can be hardly a mountaineer who has never heard of the peak the name of which stands at the head of this paper. No one who has been at Turin can fail to have been struck by it apparently closing the vista of many streets; and writers on the Waldensian valleys exercise their peculiar faculty of exaggeration in no point more than in their word pictures of something they take to be the Viso, but which as a rule is only a minor summit. When it is desired to extol the panorama from any of the great Swiss peaks, the view is generally said to be limited by the Ortler Spitze and by the Viso. In nearly every case it may be fairly questioned whether both of these summits are actually within the range of vision; but of the two it is more likely that the Viso is really gazed at by our enthusiast, for it towers up in solitary majesty far above all neighbouring ranges, whereas the Ortler, when not (as is generally the case) hidden behind the Bernina, is to some extent lost in the group of which it is the culminating point. Yet it is rarely that a feeling of curiosity leads any of us to try to approach nearer to the grand peak which bounds the horizon. This neglect may be accounted for on many grounds, some of which I have discussed in my former paper on the Cottians, but it is specially odd in the case of the Viso. Perhaps no other of the great peaks is so well seen from the plains of Piedmont, and it is doubtless to this that it owes its unique position as the one great Alpine summit (as distinguished from a range) of which we have express mention in classical writers. Lord Macaulay’s famous schoolboy would doubtless at once quote those fine lines of Virgil:—

‘Ac velut ille canum morsu de montibus altis
Actus aper, multos Vesulus quem pinifer annos
Defendit.’*

The epithet ‘pinifer’ is scarcely applicable to the Viso at the present day; yet amid the vast sea of stones and rocks by which it is surrounded on all sides we find the Piano Melezet,

* ‘Æneid,’ x. 707.

on the way to the Col de la Traversette, a name which evidently refers to a time when this plain was covered with larches. Mr. R. H. Budden is making a patriotic attempt to restore the meaning of Virgil's epithet by his plantation of young pine trees on the Piano del Re, very near the foot of the great peak itself. The boar, too, I fear, has gone the way of the pines, though rare chamois are still found. Two other writers are led to mention the Viso through their investigations into the sources of the great Piedmontese river. Pomponius Mela* tells us, 'Padus ab imis radicibus Vesuli montis exortus parvis se primum e fontibus colligit;' and Pliny† expands this account—'Padus e gremio Vesuli montis celsissimum in cacumen Alpium elati finibus Ligurum Vagiennorum visendo fonte profluens.' The curious fact, that though the Viso and its neighbourhood were first explored by Englishmen, yet to the present day only a mere handful of English travellers have been anywhere near it, is to be explained by reasons which I have spoken of elsewhere, and which I will not weary my readers by repeating.

The peak long passed for inaccessible, and, indeed, the face which is turned towards the plains is not adapted to stir up the zeal of any but the most desperate climbers. Many ages elapsed before this proud citadel of nature was conquered; for need it be said that when certain writers strive to show that Hannibal crossed the Viso, they mean the pass of the Traversette and not the great peak itself? Its ascent was one of the most brilliant feats in the Alpine career of Mr. W. Mathews, a gentleman whose extensive explorations in the south-western Alps ought to have secured more imitators in our Club. In company with Mr. F. W. Jacomb, and guided by Jean Baptiste and Michel Croz, he succeeded in scaling this dreaded summit on August 30, 1861, the route taken being suggested by Mr. John Ball, and lying up the southern face.‡ The expedition was repeated the next year by Mr. F. F. Tuckett, who was only content with passing a night on the summit in a snowstorm. His paper in the very first number of this Journal is, I believe, also the last as yet published in these pages on the subject of the Viso. The climb soon became popular with the members of the Italian Alpine Club, but the English visitors were few and far between.§ All these ascents

* 'De Situ Orbis,' ii 4 (4). † 'Hist. Nat.,' iii. 16 (20).

‡ 'Peaks, Passes, and Glaciers,' Second Series, vol. ii.

§ Besides the ascents already mentioned, and those described below, the following English ascents are the only ones of which I have been

had been made by the same route up the south face. A new way was first * struck out by MM. P. Guillemin and Salvador de Quatrefages on August 12, 1879, after many plucky and adventurous attempts extending over three seasons.† This lay up the north-west face of the Viso—that looking towards France. It was reserved to the writer to force, on July 28, 1881, a third route, up the steep north-east face—that overhanging the sources of the Po. The three main faces of the mountain have thus been scaled, and I propose in this paper to describe the various routes hitherto taken, as I believe I am the only traveller who has made the ascent by each of them.

The range of the Viso is composed of a ridge running roughly north-west and south-east (taking a bend to the west at the Visolotto), and rising in several pinnacles. Of these the following are the chief, reckoning from south to north, the names and heights being taken from the new survey not yet published ‡:—

1. Punta Michelia, 3,132 mètres (= Cima Costa Rossa of the old map).
2. Punta Sella, a point on the south-east ridge of the Viso.
3. Monte Viso, 3,843 mètres.
4. (A little peak, called on the old map *Le Sedie Cadreghe*.)
5. Visolotto—two points, 3,346 mètres and 3,353 mètres in height.
6. Punta Gastaldi (probably identical with the Visoulet of the French map), usually called Viso di Vallante, at or close to which point the Viso range abuts on the main ridge of the Alps which separates France from Piedmont.

The Viso ridge is prolonged from No. 6 to the north through various minor peaks, the Colle del Colour (= couloir) del Porco,

able to find any traces:—Rev. Beauchamp Walker (1864), the late Rev. W. H. Hawker (1869), Miss Straton and Miss Lloyd (c. 1871), Messrs. Pilkington and Gardiner without guides (1878), Mr. C. C. Tucker (1878), Miss Walker and Mr. H. Walker (June 1879).

* A Mr. Blake, of Boston, U.S.A., in 1851, and a Mr. Marshall, an Englishman, in 1862, are said by local reports to have attempted this side, but without success.

† ‘*Annuaire du C. A. F.*,’ 1877–8, and specially the 1879 volume, pp. 9–22.

‡ I am indebted to Signor G. B. Rimini, Secretary of the Florentine Section of the Italian Alpine Club, for a lithographed copy of the Viso sheet of the new and immensely improved survey (made in 1880), and to Signor Cesare Isaia for a copy of the same beautifully printed in colours. I take this opportunity of publicly thanking both gentlemen for their great courtesy.

the Col and Trou de la Traversette, to the twin peaks of the Granero and the Meidassa. West of No. 6 is the Col de Vallante, beyond which the range soon turns to the south and runs towards the peaks of the Chambeyron group.

The Viso itself is thus not on the frontier, but is not far from it, and is seen far down the valley of the Guil, which runs north-west from the Col de Vallante. On its south-west flank is the valley of the Varaita, the villages in which often fluctuated between France and Savoy; the latter power finally securing them in 1713, by the Treaty of Utrecht, in exchange for the valley of Barcelonnette. On its north and north-west flank is the valley of the Po, the source of which, as well as that of the Lenta, is in the vast stone-covered downs which stretch along the base of the great peak.

The ridges north and south of the peak are crossed by several passes. South we have the Passo di San Chiaffredo, between which and the Passo delle Sagnette to the north rises the Punta Michelis. North are two gaps between the Viso and the Visolotto, named by M. Guillemin Col du Viso and Col du Siège Carré, but not likely ever to be crossed. Between the Visolotto and the Punta Gastaldi is the Col du Visolotto. These all lead from the Val Varaita (or its tributary the Val di Vallante) to the valley of the Po.

To turn to the peak itself. This is formed by the junction of a ridge coming from the south-west * (on which is the Viso

* It is across this ridge that lies the Col des Lacs, the pass for the discovery of which so many wishes were expressed in the early days of Alpine exploration, as a means of shortening the very laborious tour of the Viso in one day. M. Guillemin, who made the first passage on Sept. 12, 1876, gives the following description of his route. Descending some distance from the Col de Vallante into the valley of the same name, he skirted the base of the very steep rock wall (forming the west slope of the ridge in question, called in the old Piedmontese map *Rocche di Viso o Forciolline*), till at 12.40, just opposite and about the same height as the chalet of Bardote, he came to a deep cleft in the ridge. But not knowing anything of the opposite side, he continued to skirt the base of the wall till the rocks became less steep. He then mounted straight up, passing a withered group of pine trees, and reached, at 2.30, apparently without any trouble, the crest of the ridge—a large plateau of débris, in the midst of which were several small lakes. At 3.20 the slopes began to fall away towards the Vallone delle Forciolline, the height being taken at 2,940 mètres. A short descent led to the large lake in the valley. M. Guillemin is of opinion that the deep cleft mentioned above corresponds to the gap of the great snow gully near the head of the V. delle Forciolline, and would thus be the true Passo delle Forciolline. But this, I believe, has not yet been crossed. (See '*Annuaire du C. A. F.*,' 1876, 276-7, 280).

di Vallante of the new Italian survey, 3,672 mètres, which may possibly be identical with the Triangle, a grand summit seen magnificently to the right of the Viso in all views from the north-west, but is not to be confounded with the Petit Viso of Mr. Mathews, which is an inferior point of the same ridge more to the south-west) with the ridge already described as stretching from the Punta Michelis to the Punta Gastaldi. It therefore has three main faces.

a. There is the southern face, above the Forciolline valley, which leads down towards the Val di Vallante (a tributary of the Val Varaita), and is reached from the Po valley by the Passo delle Sagnette. This is the face by which the peak is usually ascended, and may be called the Forciolline face, or the Castel Delfino face from the hamlet in the Val Varaita sometimes taken as a starting point.

β. There is the north-west face, sometimes inaccurately called the French face; since, as has been shown, the Viso lies entirely in Piedmont, though towering above the frontier pass of the Col de Vallante. By this M. Guillemin's party made their ascent, and it may be called the Vallante face.

γ. Finally, there is the north-east face above the Po valley, which may be called the Crissolo face, from the highest hamlet in the valley. It was by the northern portion of this (which overhangs the Piano del Re, on which rises the Po) that I effected a new route last summer, while the southern portion is the slope seen from Turin, and generally from a distance. It is difficult to describe the division of this slope. It is, however, quite clear in reality, and may be said to be roughly marked by the minor ridge east of the Viso, which, after sinking to an easy pass,* rises in the belvedere of the Viso Mozzo or Visomout (3,018 mètres=10,434 ft.). The excursion called at Crissolo the 'Giro dei Laghi' lies over this pass, there being numerous lakes on both sides.

Referring for further details to the sketch map in Mr. Mathews' paper, to the Italian and French maps, and to the table at the end of this paper, I now proceed to the narrative of my personal adventures.

The Viso had long been a familiar object to me from the neighbouring peaks of Dauphiné, and the attraction of a new route still further stimulated my desire to make the ascent, which was included in my plan for 1879. But it seemed only

* Martelli and Vaccarone's 'Guida alle Alpi Occidentali del Piemonte' (p. 151) names it Passo del Viso. To prevent confusion it might be termed Passo del Viso Mozzo.

fair to let my friends MM. Guillemin and Salvador de Quatre-fages complete what they had so valiantly been struggling to carry out, and we therefore agreed that they should leave a note for me at Abriès (near the northern foot of the mountain), to inform me whether they had finally succeeded or not. As I had arranged to take the Viso at the end of my campaign, my friends had thus ample time before them.

After my explorations in the Chambeyron group, I bent my steps towards the south, and spent many happy days in roaming among the higher ranges of the Maritime Alps. The further south we went the fainter did the Viso appear on the horizon, till on the Col de Tenda it was a mere dream—recalling vividly to mind Tennyson's lovely description of Monte Rosa as seen from the Duomo at Milan—to which it seemed almost profane to attach a name. We then worked northwards along the eastern side of the main chain, across a succession of passes and through valleys one lovelier than the other, till on the last day of August we had a view from the Colle della Bicocca of the southern face of the Viso from top to bottom, being separated from it only by the deep cleft of the Val Varaita. On this side it is a splendid wall of rock, either end of the summit ridge rising into a peak. I have seen few more magnificent sights in my life, and I felt that to gain so marvellous a vision was worth enduring all the heat from which we had lately been suffering. We slept that night at Castel Delfino, and, after being detained there a couple of days owing to my severe indisposition, due to that very heat, crossed over into France by the Col d'Agnel and by the Col Vieux, reaching Abriès on the evening of September 3. It was doubtless very selfish and very weakminded, but I confess that when I learnt from M. Guillemin's note, which I found here, that his party had made the new route three weeks before, my feeling was not one of altogether unmixed pleasure. One bit of information was rather startling—that my friends thought the ascent was harder than that of the Meije. Now to me the Meije represents the *ne plus ultra* of difficulty, nor can I believe that even the Dru comes up to it in this respect. Hence to attempt an ascent said to be harder than the Meije at a time when I was feeling far from well seemed then, and seems to me even now, somewhat rash. But I could not make up my mind to give up this excursion, which was to form the crowning point of a journey of hitherto unbroken success; and it was for this reason that I found myself on the morning of September 4, 1879, in company with my two faithful companions the Almers and a native porter, being jolted in a springless hay-cart along the char road, which leads to the upper part of the valley of the Guil, the

mountain stream on which Abriès is situated. Three hours of this on a fine morning, the sultriness of which was rather suspicious, were quite enough for any one, even though the grand north-western face of the Viso was full in view. Another hour took us to the conveniently situated hut fitted up by the French Alpine Club, and known as the Refuge des Lyonnais, from the fact that the first Frenchmen who ever ascended the Viso were some climbers from Lyons (1875). Resting here awhile, we then proceeded to the head of the valley, and leaving to the left the path to the Col de la Traversette, climbed for 1 hour 40 minutes up the stony slopes to the Col de Vallante, descending a few steps on the Italian side of which, we resolved to camp under an overhanging rock just above the lake. As the day wore on fleecy clouds had appeared near the Viso, and in the afternoon it was almost enveloped in them; so that we had scant opportunities of making out our route, though M. Guillemin had kindly left us full instructions.

No good engraving of this face of the Viso has yet been published; that in 'Peaks, Passes, and Glaciers'* gives only the most prominent features of the view, and that in the 'Annuaire du C. A. F.,' 1878, p. 53, is badly engraved from an excellent photograph. Let me here try to render into words the impression made on me by the view from our bivouac.

Imagine a grand rock-wall rising nearly sheer above one's head for a height of about 3,500 ft. This is divided into two parts by a great ledge or platform (marked by a strip of névé, and slanting downwards from left to right), from which, to the left, a couloir leads down to a three-cornered bit of glacier and towards the depression between the Viso and Visolotto—our morrow's route. To the right this platform terminates in a magnificent hanging glacier, which discharges its refuse into the Vallante valley by a gully which quite realises one's ideal couloir. Above this platform rises to the left the very much foreshortened highest ridge of the Viso, while to the right above the glacier the Triangle asserts itself in a far more majestic manner, and seems to claim supremacy. But this view is better seen from some point more distant from the base than our bivouac, which was too close to the great peak to allow us to appreciate it fully. On all sides we were surrounded by dark and ruinous ridges and slopes of stones: the lower spur of the Visolotto looked specially forbidding, and altogether the prospect was wild and Alpine in the extreme, especially when seen amid wreaths of floating mist.

* Second Series, vol. ii.

The route we had hitherto taken serves to make one realize the fact that the Viso is some way from the French frontier, though well seen from France over the depression of the Col de Vallante. It was something attempting the Gabelhorn from Evolena, the upper Val d'Hérens representing the Guil valley, the Col du Grand Cornier corresponding to the Col de Vallante, and the Mountet hut to our bivouac, though the descent from the former col to the Mountet hut is far longer in point of distance and time than that from the Col de Vallante to our sleeping-place. Hence an ascent of the Viso by this route involves a considerable détour, and is best suited for those who do not propose to descend into the Italian valleys.

As the night advanced the mists gradually disappeared, and the wonderful sight of the steep crags of the Viso, bathed in the clear light of the moon, joined to anticipations of another Meije and my indisposition, allowed me but little sleep. Besides, we suffered a good deal from cold, perhaps owing to our recent tropical experience, and to the fact that during the previous two months we had not once had occasion to sleep in the open, and had thus become unused to this delightful incident of mountain rambles. Next morning (September 5) we started at 4 A.M., having lost the habit of early starting whilst among the Maritimes, where it is not essential. The party consisted of myself, of Christian Almer, and of his son Christian, the latter, then but twenty years of age, a most promising young guide. Our Abriès porter was to take back the blankets, *marmite*, &c., to the Refuge des Lyonnais. Our first object was to gain the depression between the Viso and Visolotto, whence we knew that it was not difficult to get on to the great north-western slope of the former. The way lay over loose rocks, round the projecting spur of the Visolotto, to the snow slope coming down from the col, no trace being found of the great chasm which so alarmed early explorers.* We reached the snow in forty minutes, and in another forty minutes the col, elated by our unexpectedly rapid progress. There are two gaps in this ridge separated by the shattered pinnacles of the Sedie Cadreghe, or Square Chairs (3,080 mètres = 10,105 feet), scaled by M. Guillemin in 1878,† who has named both these gaps; that to the left of the Siège Carré being called Col du Siège Carré (3,040 mètres), and the other the Col du Viso (3,055 mètres). That gentleman thinks it would be possible to descend from them to the head waters of

* 'Peaks, Passes, and Glaciers,' Second Series, vol. ii. pp. 140, 172.

† 'Annuaire du C. A. F.,' v. 45.

the Po ; this, however, has not yet been, nor, in my opinion at least, is ever likely to be accomplished. On the col we found a card written by Mons. Guillemin, telling us to go due south ; so after peering over into the Po valley (then filled with light vapours) and admiring a fine hanging glacier close by (with which we made closer acquaintance in 1881), we clambered up a gully, the rocks in which were very rotten, to a stone man built by our predecessors on what they have called the Roche des Chamois. This marks the point at which it is necessary to turn over on to the north-western face proper of the mountain, the rocks directly below being very steep, and, if not impracticable, at any rate likely to take more time to climb than our somewhat circuitous route. Turning now to the right and keeping nearly at a level over easy rocks, we reached in half an hour from the col a small bed of snow (which Mons. Guillemin calls the V-shaped glacier), cut along its upper rim, crossed the great couloir just beyond, mounted it for a few steps, and came to what turned out to be the great difficulty of the expedition, viz. ice-covered rocks on its further side. These were somewhat troublesome, but there was plenty of hand hold beneath the ice, and the slope was not particularly steep. Climbing up these rocks, and leaving the couloir to the left, we soon found another cairn built by our predecessors, and a little beyond halted 35 minutes for breakfast. It was now clear that there was very little snow on the rocks, owing to the advanced season, and that we would thus escape from certain difficulties, although we were aware that the great obstacles which had so frequently stopped our predecessors were still higher up. In ten minutes more we came to the strip of *névé* which is so conspicuous in all views, running across the mountain from the splendid Glacier du Triangle on the right, and of which the outlet is the great couloir mentioned above. We had been only an hour from the V-shaped glacier ! From this point the summit is hidden by a number of pinnacles of rock, which rise at no very great distance above this strip of *névé*. One of these, resembling in shape an inverted bell, we had been specially told to aim for, and we had no trouble in at once identifying it. We cut straight up or across this *névé*, the snow being hard ; our only adventure was the breaking of the strap of the cognac flask, which, with its contents, rapidly made its way to the Val di Vallante. On gaining the upper rocks we bore to the left to the crest of the *arête*, then back to the right under the bell-shaped rock to a snow couloir. The sight of this made my heart beat fast, for I knew that the top must now be close at hand. We mounted

a few steps, partly on rocks and partly on snow, soon saw traces of our predecessors, and in a few seconds more had gained the delicate snow ridge at the upper end of the couloir, when we found ourselves on the highest ridge of the mountain, between the two summits. In two or three minutes more we were all clustered round the great cairn on the left-hand or eastern summit.* We had been an hour and twenty minutes from the lower edge of the strip of *névé*. As it was just 9 A.M., and we had started from our bivouac at 4, we had been just *five hours*, including 15 minutes on the Col du Viso and 35 minutes' halt for breakfast. Of the 4.10 actual walking, 1.20 had been up to the Col du Viso, and 2.50 thence to the top. I had been obliged to go slowly, owing to my indisposition and the bad night I had passed; otherwise we might have saved at least half an hour. Our predecessors, already tolerably acquainted with the mountain (on no part of which had any one of us ever been before), had taken 12.10 from their camp, not far from ours. This included many halts for photographing purposes; but when Mons. Guillemin reckons† the distance at 6.20 actual walking, I can only explain the discrepancy by supposing that the state of the mountain was far better when we were on it than on his ascent three weeks earlier. We found no difficulty, save the ice-covered rocks, and the rocks generally are firm and good. The ascent by this route is far more interesting than by the usual route. But, alas! during the latter part of our climb the envious mists had been gathering, and on the top we had to content ourselves with cloud effects, save one glimpse into the Po valley. This was a great disappoint-

* The height of the Viso is now determined within very narrow limits. In 1861 Mr. Mathews found the mean of his barometrical observations, when compared with the readings at the same moment at Geneva, Turin, and the Great St. Bernard, to be 12,668 feet, or 3,861 mètres. ('Peaks, Passes, and Glaciers,' *l.c.* p. 175.) Mr. Tuckett obtained, in 1862, a mean height of 12,632 feet=3,870 mètres ('A. J.' i. 31). The French map (Larche sheet) gives the height at 3,845 mètres=12,615 feet, and the Piedmontese at 3,840 mètres=12,599 feet. The new Italian survey has the figures 3,843 mètres=12,609 feet, which very nearly corresponds to the height deduced by Mr. Mathews by comparison with the Great St. Bernard (12,612 feet). All these heights refer to the eastern peak. The western peak, according to the observations of Signor Simonetti (the engineer officer charged with the new survey) in the travellers' book at the Piano del Re inn, is 3,841 mètres.

† See 'Annuaire du Club Alpin Français,' vi. 22.

ment, though one which is common enough on this peak. We found on top at least 100 cards of Italian climbers, but of English names only those of Messrs. Pilkington and Gardiner, who, ascending from the south, had had no more of a view than ourselves. There are two plaster images of the Madonna in wooden cases on the eastern summit, these cases serving also as receptacles for the cards of visitors. Having joined our names to those of our French predecessors by the new route, and having visited the three stone men on the western summit, 10 minutes distant, we turned to descend, there being no hope of a break in the clouds. We resolved to descend by the usual route, in order to explore the mountain thoroughly. The way is easy and fatiguing, lying over rotten rocks and down small gullies, the first bit down the highest rocks being the steepest. The multitude of cairns built by previous parties is so great as to be hopelessly confusing. The proper line is to bear slightly towards the left, specially at the base of the slope. In just over an hour and a half from the top we reached the great snow slope at the head of the Vallone delle Forciolline. We might have crossed to the left by the Passo delle Sagnette to the valley of the Po. We had hoped to cross Mons. Guillemin's Col des Lacs on the right, and so regain the Val di Vallante not far from the col, but the clouds now came down in rain, and, like all who have been in this detestable valley in bad weather, we entirely lost the faint track. Imagine a chaos of great boulders, with intervals of smaller ones, and every now and then a lake; imagine clambering about over these in a desperate sort of way, and finally seeing the stream which we had been taking as our guide disappear over a precipice which seemed in the mist and rain to be of unfathomable depth! The map only serving to perplex us, we were forced by our disinclination to follow the stream any longer to bear more and more to the right. The rocks gave way to stony slopes, and these to very steep grass slopes. I was absolutely hopeless of ever reaching a hut, when Almer hit upon a very badly-marked path, which ultimately brought us, after nearly three and a half hours' walking from the great snow slope, to some huts—called Chardonney on the old Italian map—at the junction of the Val delle Forciolline with the Val di Vallante, about two hours above Castel Delfino. The owner of one of these kindly took us in and entertained us as well as he could, and we were glad enough to have a roof over our heads, as it was raining hard. Thus, despite the bad weather, we had taken but nine and a quarter hours' walking to cross the Viso from our camp to this hut, and under more favourable

circumstances it ought not to take more than eight. I should advise future travellers to cross the Sagnette to Crissolo, and to regain France by the Traversette, thus avoiding that odious Forciolline valley, which I am far from being alone in regarding with the utmost horror. The weather was still sulky next morning, but we started in hopes of escaping with dry skins. This idea was, however, utterly knocked on the head, the rain soon coming down softly but continuously. We reached the Col de Vallante in two hours from the hut, and the Refuge des Lyonnais in an hour more. Here we found Mons. James Nérot, a member of the English and French clubs, who hoped to repeat the ascent of the Viso by the same route. He received us with open arms, having become alarmed at our prolonged absence, for we had hoped to return to the Refuge the previous evening. I confess with shame that I yielded to the seduction of 'afternoon tea,' which was heightened by the pleasure of hearing many items of Alpine news, for during the preceding six weeks we had been in regions whither such gossip had never yet penetrated. It was only by making an heroic effort that we tore ourselves away and walked down the well-known road to Abriès, where our success was received with unexpected enthusiasm by the old sisters (of the inn Chez Richard), who had been very kind to me when feeling very unwell, and had done all they could to prevent me from going in search of adventures on the Viso, the mishaps of Mons. Guillemin's party having become almost legendary at Abriès. Not a glimpse on the way did we catch of our vanquished foe, who availed himself of the powers of the air to such an extent that Mons. Nérot had to retire, after a siege of several days, without even attempting the ascent. I can strongly recommend this expedition to any mountaineer finding himself in this region. The climb is far more varied than by the old route, and the view, when unclouded, must be unique, including the Mediterranean. A descent the same way is perfectly feasible, our only reason for not effecting it being my wish to see the other side of the mountain.

We left Abriès next morning, and I came straight back to England, after a long and most successful campaign. But though we had reached the summit by a route only once previously and never since traversed, I was still unsatisfied, and resolved to take an early opportunity of thoroughly exploring the peak and the surrounding ranges. This desire did not find fulfilment in 1880, as Gardiner and myself had managed to discover so many summits in the central Dauphiné Alps, which were as yet unknown to one or both of us, that we were kept

fully occupied during a six weeks' journey, and, in fact, were almost surfeited with peaks and passes. When drawing out my plan for 1881, the Viso was made one of its chief features, especially as a wild idea had seized me that possibly it might not be impracticable to ascend the Viso direct by the north-eastern face above the sources of the Po, and in the words which concluded my paper on the Viso from the north-west, read before the Club in March 1881, I threw out a hint to this effect, adding that I proposed to try it myself. I resolved at any rate to have a look at this side, none of our party having ever seen that face, except from a very great distance.

One day at the beginning of last July, as I was resting at St. Christophe after some expedition, Gaspard, the well-known guide, appeared, and presented me with a letter and a visiting card (both addressed to me) which he had just brought over from La Grave. The card was that of Mr. F. F. Tuckett, and the few lines on it served as an additional proof, if any were required after the many kindnesses, dating as far back as 1869, which I have received at his hands, of the generous unselfishness of that distinguished explorer and climber of the Alps. This card (left by Mr. Tuckett on his way home from Corsica, via the Vaudois valleys) bore the date of June 28, and the following words: 'I think you will bag the Viso from Crissolo, especially if you get to the plateau of the little glacier from the French side, as there is a couloir thence nearly to the top.' It is scarcely necessary to say that my previous vague intention to have a look at this face was transformed by this hint from so experienced a climber into a resolve to make an attempt to force the new route.

We stayed on a few days in Dauphiné, effecting on July 11 the second ascent of the Écrins from the Col des Avalanches, and finding the ice-covered rocks in so dangerous a condition that we preferred to descend by the usual route, and spent a good part of the night in scrambling down the moraines of the Bonnapierre glacier—a fact which will appeal vividly to those who have the doubtful privilege of being personally acquainted with that abandoned spot. To those who as yet know it not my earnest advice is that they should be most careful *not* to visit it in the twilight or after dark. The climb took us just over 22 hrs. from a bivouac about 2½ hrs. above La Bérarde back to La Bérarde by the Col des Écrins, the ascent from the Col des Avalanches to the summit of the Écrins costing no less than 7½ hrs.' walking. Monsieur Duhamel's ascent was made when the rocks were quite free from ice. The two points which consoled me for this very exhausting expedition were the mar-

vellous view we had from the top, and the fact that we were the first to 'traverse' the Ecrins, combining the two sides in a single expedition. Little by little we worked our way to the lonely but beautiful valley of Escreins (which will be described in another instalment of these papers); thence to Maljasset, in the Ubaye valley, where we rated the landlord for having given the information which led in 1879 to our being arrested as Prussian spies at St. Paul, the next village in the valley. He expressed himself very penitent, but explained that he could not for the world make out what else we might be. The intense heat of the latter days of July, and the remembrance of my sad fate in 1879, induced me to take many more rest days than would as a rule be necessary; so that it was not till the evening of July 23 that we once more gained the hamlet of Castel Delfino, in the Val Varaita, and put up again at Lorenzo Richard's rather noisy inn. A quiet Sunday spent on a little wooded island in the rushing stream of the Varaita was very acceptable, and gave us full opportunity of recalling the interesting historical associations of this village, dominated by its ruined fourteenth-century castle, and in its name preserving a recollection of the time when it belonged to the Dauphiné, from which it is separated by a strong natural barrier.

On Monday, July 25, we set out for the pass of San Chiافredo. A duller and more fatiguing walk than it is on this side can scarcely be imagined. Following the track past the picturesque Ponte Castello up the Val di Vallante as far as the huts (1½ hr. from Castel Delfino), at the entrance of the glen named V. delle Giargiatte on the new Italian map (gaining a view of the huts where we had slept in 1879, about 20 mins. higher up the main valley), we left the path, where there is a bridge to the left bank, and turned up towards the Giargiatte valley. The old map is here very faulty. The name Giargiatte really applies to the valley called Rio di Roccarossa; the Rio di Giaffon, to the north, is simply non-existent. In fact, but one tangled ridge separates the Forciolline and Giargiatte valleys. Mounting by a steep wooded slope, and bearing to the left, we came in 1.10 to the edge of a huge 'clapier' or slope of loose boulders, which we had long seen from below. Toiling over this for some time, and then keeping to the right straight up the valley, we came to some stony pastures tenanted by cows. Traces of a path began to appear, and as we drew nearer and nearer the ridge at the head of the valley we became more and more cheerful at the prospect of our labours coming to an end. But, alas! this apparent ridge turned out to be only a great spur of the 'divide' over

which we wished to pass; the path led more and more to the left, till at length, when the topography was becoming thoroughly puzzling, we passed through a small rocky defile and emerged on the plain at the head of the valley, on which glittered the three lakes we had been so eagerly looking for (1.50 from the clavier). Signori Martelli and Vaccarone, in their valuable '*Guida alle Alpi Occidentali del Piemonte*' (p. 125), say that there is another easier path more to the north by which this lake plateau can be reached. Certainly nothing could be more tiring and monotonous than the way we had followed. Passing by the side of these lakes, we came in 20 mins. to the true col*—the track leading straight up to the proper point rather to the right. The view from the col, which is desolate in the extreme, includes the Pelvo di Elva, the Brec de Chambeyron, and the Rubren. We hastened down the other side to the plain in which rises the Lenta, passed some small lakes, and struck boldly to the left, reaching in 40 mins. a cairn and ruined hut, on the edge of a steep descent to a plain below, in which lakes again formed a prominent feature, as they do in every part of the environs of the Viso. Here a magnificent view suddenly presented itself—the eastern face of the Viso, a sight in itself enough to repay us for our fatiguing journey. From scarcely any point is it more majestic. We studied it not merely with admiration, but with some anxiety, as it did not seem to promise well for our attempt; but I recollected that the exact slope we hoped to attack was on the northern part of this great eastern face, and tried to comfort myself by reflecting that all was not lost as yet. After a very long halt we descended to the lakes, passed (in an hour from the hut) the Italian Alpine Club hut at the Alpetto alp, wandered over the great downs near the Rocca Nera in a light mist, and finally, by a path which seemed as if it could never descend far enough, crossed the infant Po and entered the piazza of Crissolo, the chief hamlet in the upper valley of the Po (2.20, including some time lost, from Alpetto). Here an agreeable surprise awaited us. I was aware that the inn at Crissolo was frequented by Italian tourists, and was therefore presumably better than most of those we

* In all probability this is the pass (called Col di Costa Rossa by Mr. Mathews) crossed by Principal Forbes in 1839, and by Messrs. Jenkinson and Whateley in 1854, which is described as being farther from the Viso than the Sagnette ('Peaks, Passes, and Glaciers,' Second Series, ii. 171-2). Joanne ('*Alpes Françaises*,' pp. 958-9) gives a detailed description of it.

had lately come across, but I was not prepared, on entering the Gran Albergo del Gallo, at the lower end of the village, for the very decent little room into which I was shown, or for the intelligence that a *table d'hôte* was in progress, an even greater and more unusual luxury when one has been dependent for several weeks on village *auberges*. I was very much pleased altogether with this little inn, and hope that it may in future be more patronised by English travellers than it has been. The landlord (Signor Giovanni Pilatone) is a brother of 'mine host' at the Sanctuary, and is most obliging and civil. The mists which had led us astray on the way down gathered more heavily during the night, and next day was but a succession of violent thunderstorms, accompanied by rain in almost tropical torrents. Indeed, sitting on the balcony of the Gallo and watching the gutters overflow and rush down the village street, it seemed as if fine weather had finally and for ever abandoned us after the long spell of drought which had done so much mischief here as in other parts of the world. I amused myself with studying the strangers' book, noting the various adjectives expressing terror, dread, and alarm which were applied to the ascent of the Viso by the usual route. A few Turin and Saluzzo newspapers shed a vivid light on politics in England (which had lately been taking a rather serious turn), heightened by the extreme brevity and conciseness of the telegrams.

Next morning the weather had righted itself, and I was able to make an examination of the village and its neighbourhood. The Po valley is here very narrow, and the stream is but a roaring mountain torrent, astride which is the little hamlet of Crissolo. The piazza and most of the houses are on the left bank. A little townhall, which aims at being very imposing, and a very poor little chapel, both on the piazza, seem to comprise all the public buildings of the place. The main street starts from the piazza and is the path down the valley; it is chiefly made up of small inns for the pilgrims to be mentioned directly. Two inns facing each other bear the sign of the Gallo; they stand to each other in the relation of parent and child, the chief house being that on the right with a café on the ground floor, the other being used as a *dépendance*. Crissolo is very prettily situated, the woods coming quite down to the right bank of the Po; and the white church tower of Borgo in the distance is a conspicuous object. But if Crissolo had not something more to depend on than stray tourists I fear it would go badly with it. It is really supported by the crowd of pilgrims who throng to the shrine of

San Chiaffredo, a quarter of an hour's walk up the hill-side. Of course it was one's bounden duty to make this short pilgrimage and examine the big church filled with ex-votos, the gaudy frescoes of the saint on the walls outside and his shrine of rather poor architecture within, and the hospital for the pilgrims, part of which is now an inn known as the 'Albergo Estivo.' But more attractive than all is the grand peak of the Viso, seen from here towering above the forests, which seem to stretch up to its base, and keeping guard at once over the sources of the great Piedmontese river and the great local saint. But I must leave all details to Mr. Freshfield, and reserve the special sights I witnessed in this place for a later period in my story. Another sight which we also dutifully visited that morning is the curious limestone cavern of the Rio Martino, 20 minutes' walk or so from the village, on the slopes above the right bank of the Po. I do not propose to incur the terrible fate towards which Mr. Freshfield seeks to allure me, and shall therefore simply say that it is possible to penetrate into it for a distance of 600 mètres, or nearly 2,000 feet, that it abounds in stalactites and stalagmites of various quaint and beautiful forms, and is closed by a lake, into which thunders a cascade, the roaring of which is very striking so far in the bowels of the earth. A plentiful supply of Bengal lights (to be procured at the Crissolo inn) should be taken, as they greatly increase the impressiveness of the scene, and waterproofs are an advisable precaution. The local magnesium wire is not to be relied upon. The stream is lost underground a short distance from the entrance. Access to this cavern has been much facilitated by the Turin section of the Italian Alpine Club, which has caused steps to be hewn in the slippery rocks, bridges and chains to be placed, and has thus made its exploration an indispensable incident of a stay at Crissolo. Another grotto—known as the Grotte des Anglais—is more difficult of access; it is described at length in the travellers' book by an Englishman, a Fellow of the Geological Society. Crissolo lies at a height of 4,447 feet above the sea.

The morning passed away pleasantly, and in the afternoon we set off for the inn on the Piano del Re, the landlord and a very active and amusing waiter not concealing their entire disbelief in our proposed new route up the Viso. The day was very hot, we were heavily laden, and there was plenty of time; so we halted whenever we liked. After some time a turn in the valley conceals Crissolo, and the Viso Mozzo becomes the chief object. The neighbourhood becomes more and more desolate; trees gradually disappear, and when we came to the Piano Melezet existed only in name. The Viso soon

absorbed all our attention, especially as we now began for the first time to see the face by which we proposed to make our attempt. Many a halt was called to scan it with the glass; but the more we looked at it the less we liked it, and I think my readers will agree with me when they turn to the engraving accompanying this paper.* I was rather in favour of trying to gain a large patch of snow seen to the left some way up the peak, the rocks below which had, however, a most forbidding appearance. Almer inclined to the great gully below the little glacier between the Viso and the Visolotto, and he was, as usual, right. Just before reaching the Piano del Re there are some zigzags in the path to surmount a steep step in the valley down which rushes the baby Po, in what is known as the 'Prima Cascata del Po.'

After a pleasant lounge of $2\frac{1}{2}$ hours we reached the Piano, which, it may be explained, is not called 'del Re' from Victor Emmanuel, the name being of much earlier origin, and possibly referring to Francis I., who constructed a path on the French side of the Col de la Traversette. In the midst of this small plain is a hillock, on which is the little 'Albergo Alpino,' kept by the brothers Genre. It is at a height of 2,041 mètres = 6,697 feet, and is principally supported by Italian tourists, who come up here to visit the sources of the Po, which are five minutes off. I at once proceeded to pay my respects to the great river in his birthplace, while the guides mounted a neighbouring ridge to study the Viso. The actual source is a fine spring welling up between two great boulders, and issuing from underneath a huge mass of débris which covers all the surrounding hills. The water is deliciously cool and clear, and a sojourner by the banks of the great river of Southern England may be excused for thinking with regret of the limpid stream of the Po, especially when visited at the close of a hot summer's day. At this height, however, the air became chilled early, and I regained the little inn, where the lame Signor Genre set before us a plain but very acceptable supper. It is to be noted, as an oddity, that neither from Crissolo nor the Piano del Re inn is the Viso visible, though a few minutes' walk reveals it in either case. Almer reported that he thought my route not worth trying, and it was resolved that the great gully must be forced. We of course identified at once the

* It is taken from a fine photograph by Signor Giuseppe Berardo, of Savigliano, whose collection of excellent photographs is for sale at the Piano del Re and Crissolo. They all represent scenes in the neighbourhood, and may be had in various sizes.

glacier and couloir above it mentioned by Mr. Tuckett; the glacier is that which, as I said before, we saw close at hand in 1879 when ascending the Viso from the north-west; it was, therefore, evident that so far the way was plain if we reached it by our old route. But against this plan there were two conclusive objections. To make this circuit would involve the loss of a day at least, and by taking this route we should not, in the full sense, be ascending the Viso direct from the sources of the Po, as was our intention. Hence it was thought of only to be rejected.

We set off at 3.30 on the morning of July 28—the usual party of three. For some time the way was clear, and we followed the track behind the Albergo up to the Lago di Fiorenza, and then up rocks and stone slopes, this being the path taken on the excursion called ‘Giro dei Laghi,’ which consists in passing from the Lago di Fiorenza to the Lago Grande di Viso by the ridge between the Viso and the Viso Mozzo. In 1½ hr. we halted to examine our route and to refresh, and at 6.20 (2.05 walking from the inn) were on the great snow slope at the base of the gully, close to the rocks on its (proper) right side. The day’s work was about to begin, and we halted 10 minutes to rope. It was quite obvious that this gully was the natural channel for anything falling from the projecting glacier above, which is of very great thickness; but close observation showed that there were no traces on the snow of any fresh falls, and we hoped to be out of range by the time the sun had got any power. Our route all day is easily traced on the annexed engraving. Cutting steps in the snow, which was still hard, keeping close to the rocks of the right side, and watching for any stones which might become dislodged from above, we gained without difficulty the point at which the great gully bifurcates, the left fork running up to the Col du Viso, and the right to the Col du Siège Carré, if one may be allowed to apply the name of ‘col’ to gaps which are never likely to be forced. Keeping up the former and cutting steps rapidly as one or two stones came rattling down, we took as soon as we were able to the rocks to our left hand, and were soon out of all possible danger from the glacier. These rocks were good, and we mounted rapidly towards a great rocky pinnacle which supports the glacier to the left. The most doubtful point in the whole expedition was now on the point of solution. Could we gain the glacier by circumventing this pinnacle? Such was the problem as propounded by Almer. The higher we got the more exciting it became; the rocks did *not* become more difficult; our hopes rose. In a little gully, with apparently

one more corner only to turn in order to see what would be our fate, Almer insisted on halting (8.30-8.55) to refresh in preparation for some terrible 'mauvais pas.' I acquiesced with some indignation, as we were now so nearly on a level with the glacier that it seemed scarcely worth while to stop before the point in question was decided; but I reflected that long experience had taught me that it was as a rule better to act on Almer's recommendations without inquiring into their precise grounds. We started again, got on to the great rock face, and caught a glimpse of a little gully between two rocky points; up this we went, and round another corner, when a shout from our leader announced that we had won the day. At 9.25 we stepped triumphantly on to the glacier—2½ hours' walking from the base of the great gully. The Col du Viso had been crossed as far as it is possible to cross it, unless some future adventurer insists on cutting up the thick end of the glacier—a task I do not envy him or his guides. A quarter of an hour to the right across the glacier would have taken us to the base of the gully, by which in 1879 we had gained the great north-west face. But to-day our intentions were different. Mounting the glacier for a few steps, we then turned once more on to the rocks of the north-eastern face. These became steeper and more rotten as we advanced, and we were gradually driven to the left, seeing at one moment the great snow patch which I had had in view, but which could hardly have been reached from our present standpoint. Our object now was to reach that point in the great upper couloir at which it is cut in two by a sharp snow ridge or shoulder, and this was attained at 12.25, after a good deal of trouble owing to the rotten and steep rocks, especially in order to traverse one particularly obnoxious pinnacle, the last bit being climbed by the rocks close to the (proper) right of the couloir. Here we halted for 25 minutes. Almer now declared that we were sure to reach the top, but that there would be unexpected difficulties, as the recent rain had caused a coating of ice on the rocks; and we had to swallow this mixture of bitter and sweet as best we could. At 12.50 we set off again, keeping close, as before, to the rocks near the (proper) right of the couloir, but being sometimes forced to cut steps in the couloir itself, which was then composed of hard ice, so hard that it would have taken a very very long time to hew a staircase straight up it. We worked our way slowly and painfully upwards. At one point we were just level with the pole on the Viso-lotto, and as we advanced it became clearer and clearer that it was not on the highest point of that peak—a fact previously

suspected, the certainty of which now raised new ideas in my mind. The work was very hard for the guides: it consisted in cutting steps in hard ice, or clearing away the glaze from the rocks so as to get some hold in the rotten stone beneath. We had attained a very great height, when the couloir became steeper than ever, and it was clear that we must now abandon it, and take to the rocks on our left. Almer chose the most promising gully he could find, but the iced rocks were extremely troublesome, and it was impossible to get any firm grip with hands or feet. At one or two points the difficulties were so great that I seriously contemplated the possibility of having to retreat. But our dauntless leader would none of it, and kept on in a truly marvellous way; his years seem rather to have increased his readiness and desire for work—witness our desperate experience on the Ecrins and the Viso. But all things come to an end, and so did our gully, though not until a glance downwards between my legs had shown me that it was far longer than we had anticipated. Striking still more to the left, we at last got off the glazed rocks, the slope became less steep, and at 3.05 we climbed up the last stony slope straight to the great cairn on the eastern peak. We had been 2.15 from our last halting-place, 7.30 from the base of the peak, 9.50 (all walking) from the inn. But we had gained our object, and had achieved a fine new route up the Viso, *every step of which* lay over untrodden ground, for several previous attempts had been made in direction of the great patch of snow which had attracted my attention, and which has never, I believe, been attained.

How delightful it was to rest and bask in the sun on the summit! Late as it was, the view of the Piedmontese plains was remarkably clear, though Turin was not distinguishable. Monte Rosa, the Dauphiné, the Tarentaise, and all the neighbouring peaks were fairly well seen, but there were clouds about, which marred the view, especially towards the Maritimes, which I particularly wished to see from this point. The shadow of the great peak creeping over the plains was especially striking. It was with difficulty, so warm and pleasant was it, that we could realise that we were at so great a height, and it was only stern necessity which forced us to commence the descent at 4.05, after leaving our cards in the boxes wherein repose the Madonnas, though we could find no trace of all the cards which had been there in 1879. It is almost superfluous to say that we did *not* propose to descend by the new route; we followed the ordinary route down the south face, the rocks seeming more rotten and

wearisome than usual. In 2.05, having gone very slowly, we reached the great snow slope in the Forciolline valley, and at 6.55 were on the Passo delle Sagnette, when a halt of 15 mins. was made to admire the view on all sides. From this point, the south face of the Viso is so foreshortened as to fall far short of the magnificent aspect it assumes when viewed from the Colle della Bicocca. Starting again at 7.10, we reached the base of the *débris* couloir in 20 minutes, and then began a race against time across the Passo del Viso Mozzo. So fast did we go that at 8.45 we were at the base of the great couloir, whence we had started 14½ hrs. previously. But by this time night had come on; the track, where there was any, was of the faintest; I did not care to break my legs by balancing myself on huge unstable boulders; and we were all pretty well dead beat. After sundry wanderings, which seemed to take us rather up hill than down, I announced my intention of passing the remainder of the night under the lee of a great rock which gave some shelter: my companions resisted but faintly, and I gained my point. At times it was cold, of course, but we managed to get a certain amount of sleep, and comforted ourselves by thinking that we were much better off than on that terrible ledge on the Meije, which still haunts us all like a bad dream.

At daylight next morning we got under way; the track of course at once revealed itself, and in an hour we were under the roof of the Albero Alpino, where they had not been very uneasy about us, as they thought that we had gone down to the Alpetto hut, which we would certainly have done if our ambition had not led us to attempt the Viso in one day up and down. The rest of that day and the whole of the next were spent in delightful idleness. Genre was very much elated at our success, though I fear the small number of people likely to follow in our steps is not likely to do him much good. Many letters (including one to Mr. Tuckett) were despatched to announce our success; and time flew quickly by. It was a luxury only to breathe the clear air upon these heights, and a very keen pleasure to gaze at our conquered foe.

But the climber shares with the wicked man the reproach of never being able to rest; and at 4.25 on July 31 we again left the Albero Alpino, with the intention of lowering the pride of the Visolotto. Following the same route as on the 28th for a good bit, and then bearing to the right over grass and rock slopes, we gained at 6.25 the extreme right-hand corner of the snow-band which runs along the base of the peak, and halted half an hour for breakfast. At 7.10 the rope was put on, and

at 7.55, having clambered over easy rocks and *débris* till near a conspicuous yellowish pinnacle not far from the south-east ridge, then bearing to the right, we stood at the foot of the great wall which rises steeply towards the highest crest. Straight up this we went with but one halt, the rocks, though fairly steep, being quite free from ice, firm and good. It was nothing more than a pleasant and exhilarating climb. At 9.05 we topped the central pinnacle of the last ridge (1.50 from the snow band, 4.05 from the Albergo Alpino). The peaks to north and south * were clearly higher, but which was the highest? After some consideration we decided for the northern peak, which we gained at 9.20 by a scramble along the ridge. No trace of man—so far good. We were clearly the first to stand on this point; and it was distinctly higher than the southern point on which rose the pole we had seen from the Viso. After $\frac{3}{4}$ hr. stay to admire the view, the look down the Guil valley being particularly worth remembering, and having built a huge pyramid wherein our cards were deposited, we returned in 10 minutes to the central peak, which was also ear-marked in honour of our victory. Then we proceeded along the ridge to the southern peak. This was rather shattered, but we got on pretty well till just above the last gap in the arête. The descent to that point from where we were standing was apparently quite sheer, and to this day I don't know how we got down. However, we all did get down; and then an easy climb led (in 25 mins. from the central peak) to the pole on the southern peak. Close to it were found two cairns, in one of which was a packet containing some tobacco, a bit of string, and a fragment of cloth wrapped in several folds of paper. The two cairns were built by Signor F. Montaldo, who made the first and only previous ascent of this peak on September 4, 1875, but who expressly states that the N.W. end of the ridge seemed to be inaccessible.† But a note in the 'Bollettino'‡ mentions an ascent by two Paesana hunters, to whom the miscellaneous objects in the packet may have belonged. I wish to state most distinctly that, save on this point, no traces of man were found anywhere on the Visolotto. Genre had given us an Italian flag; which was soon attached to the pole and floated merrily in the breeze. The view was very nearly the same as from the other peak, the two northern routes up the Viso being seen in the most perfect way imaginable. I may add that the

* Strictly speaking those to N.E. and S.W.

† 'Bollettino del C. A. I.,' 1876, p. 186.

‡ 1881, p. 461.

new Italian map completely bears out our view as to the relative height of the northern and southern peaks (the central one being much lower), assigning to the former a height of 3,353 mètres (= 11,001 feet), and to the latter one of 3,346 mètres (= 10,978 feet), a decision which it is needless to say is most gratifying to me in all respects. It was only 10.45 when we reached the pole, though, according to Genre's account of the experience of our predecessors (who had been much annoyed by ice on the rocks) we ought to have been much later. Leaving at 11.30, we descended again to the gap just north of the peak, and then proceeded to carry out an idea which I had suggested to the guides—a descent by the west side. A great gully fell away from the gap where we were, and down it we went; the way became easier and easier, though we were gradually forced over into another gully descending directly from the northern peak. But the nearer we got to the snow below, the more evident did it become that there was a great 'Ueberhang' between us and it; and sure enough there turned out to be one about 100 feet high. Our rope was not long enough to allow us to lower ourselves by it, as there was no visible halting-place *en route*. We tried all manner of ways to the left, where the wall was lower; but it was only after one most sensational traverse round a smooth bit of rock where there was absolutely nothing to which to hold on, that we got on to easier rocks, reaching the snow not very far from the Col du Siége Carré at 1.45, having traversed the Visolotto in the most direct and approved style. Casting one more glance at our route of 1879, we ran down the snow, and skirting round the base of the Visolotto, close to the rocks, mounted the little valley which lies between it and the peak called Punta Gastaldi on the new Italian map (probably the same as that usually termed Viso di Vallante), and to the col between these two peaks, which we gained at 2.35. Here a glorious view burst on us of the Chambeyron and Escreins groups to the south, while on the other side we had the Po valley. In a cairn were found the cards of MM. Guillemin and Salvador de Quatrefages, who had mounted to the col from the Vallante side on August 26, 1878,* and had christened it Col du Visolotto; also a card of Lieut. G. Paganini, who is engaged on the new survey of the district, and who, apparently with a number of soldiers, had come up from the Po side. As far as I have been able to find out, ours was the first complete passage. Leaving at 2.50, we profited by the

* 'Annuaire du C. A. F.,' v. 48.

soldiers' steps in the hard snow of the couloir, and at 3.55 were on the grass again. Moving 10 mins. further down, we then indulged in a well-earned rest of an hour, re-entering the Albergo Alpino at 5.40, 13½ hrs. after having quitted it.

We were eagerly welcomed, as our flag had been seen; but they had not thought it worth while to look out for us till midday, when, of course, we were far on the other side, and the recital of our wanderings caused great surprise and interest.

We lounged away the next morning very pleasantly in the bright sunshine. A large Italian party, including several ladies, came up to do the 'Sorgenti del Po,' and had the unusual excitement of trying to make out our flag with telescopes, field-glasses, and their own eyes, so that we found ourselves becoming heroes on a small scale.

I may add that when there is no ice on the rocks, and when the great upper couloir is snow and not ice, the difficulties of the north-eastern route up the Viso will be greatly diminished, and even more so if the glacier is reached from the Vallante side. The ascent of the Visolotto is to be strongly recommended to all in search of a rock climb of no very great difficulty, especially if they propose to ascend the Viso by either of the northern routes, for the study of which this is by far the best point.

Unluckily we had now exhausted the chief interest, from a mountaineer's point of view, of the Piano del Re, and it was with sincere sorrow that we quitted the little hostelry, which had been our head-quarters for nearly a week. The accommodation is very fair, though perhaps a little rough for those not used to out-of-the-way places, and the food very decent; the prices, too, were reasonable, and the hosts do all in their power to make a stay in their house agreeable. I trust this narrative may induce some climbers to pay a visit to the spot. As the Albergo is a station of the Turin section of the Italian Alpine Club, there are many Alpine books and periodicals and any number of photographs by Signor Berardo and other artists. The ground around the inn has been planted with young pine trees at the expense of Mr. Budden, whose patriotic endeavours deserve success.

It was already afternoon on August 1 when we tore ourselves away, and mounted the path to the Col de la Traversette. We reached the entrance to the famous tunnel*

* Mr. Freshfield supplies me with an early notice of the tunnel (p. 18 of a pamphlet on the Sanctuary of San Chiaffredo, 'San Gioffredo ed il suo Santuario sui monti di Crissolo in Val di Po—Cenni

(marked by splashes of red paint) in 2.35 very leisurely going, took one last look at the Viso (which is very striking from this point), traced out once more the two northern routes, sighted our flag on the Visolotto, and then, passing through the tunnel, re-entered France after an absence of nine days, the pleasant recollection of which will long linger in my memory.

After many wanderings (mostly alone) in the Tarentaise, the Dauphiné, and the Trièves, I joined by appointment, early in September, two Oxford friends, the Rev. T. R. Terry and Mr. J. S. Mann. We rambled together through parts of Dauphiné and the Waldensian valleys, and ultimately found ourselves at midday on September 17 last at Paesana, the town near which the Po flows out into the Piedmontese plain. We had driven over from Torre di Luserna in the morning by a most picturesque road *viâ* Barge, and the same afternoon walked up in three hours to Crissolo. September is San Chiaffredo's month, and every Sunday in September is a grand festa at the Sanctuary. Hence we were accompanied during our walk by many pilgrims carrying baskets of provisions on their way to the holy place. The winding path was dotted all over with picturesque and gaily-clad groups, which gave an air of animation to the scene, though savouring just a little of the stage. The prettiest bit on the way is the glimpse of the white tower of the church of Oncino high up on the left. We were warmly welcomed at the Gallo by Pilatone and the energetic waiter. Two of us strolled up to the Sanctuary that evening, and found two booths established on the terrace opposite the church for the sale of San Chiaffredo medals and *articles de piété*. Next morning, Sunday, we all attended the high mass, the sight in the nave of the church being extremely

Storici,' Saluzzo, 1865). It is mentioned in 1495 by Padre G. L. Vivaldo, of Mondovi, as having been made by Louis II. of Saluzzo; 'A qua (subterranea via) brevi intervallo distant tergemini lacus illi, quorum aquæ perfluunt ad amœnam planitiem illam quadrilateram, cujus ab ora orientali in æquor floridum a montanis appellatum decidunt, cataractam admirabilem altitudine, argenteo splendore fragoreque constituentes nec ulla unquam anni tempestate deficientes.' There seems here to be some confusion between the Lago di Prato Fiorito to the south, and the three lakes (one of which the Lago di Fiorenza) to the north of the Viso Mozzo. Simler ('De Alpibus,' p. 234) quotes from Paulus Jovius ('Historia Sui Temporis') a mention of the tunnel: 'Illic perpetuo specu perfossæ montis in Salassos penetrari Jovius scribit,' a passage also interesting as possibly throwing light on some disputed points in classical geography, by suggesting a confusion between the Salassi and the inhabitants of Salutiæ or Saluzzo.

picturesque, the gay colours of the women's kerchiefs and dresses blending far better than could have been expected with the rather gaudy decorations of the church. In the afternoon Mann and I, with two local guides (Giovanni and Giuseppe Perotti) and a porter, crossed the Passo delle Sagnette, and slept at the new hut of the Turin section of the Italian Alpine Club above the Fontana di Sacripante, half an hour from the pass and $5\frac{1}{2}$ easy walking from Crissolo. It had only just been finished, and we seem to have been the first party which slept there. It is perfectly watertight and fairly comfortable, but there were no blankets save those which we had taken the precaution of bringing up with us. The hut is placed on a rocky mound in the valley, and is approached by a circuitous path. The way might be much shortened by cutting a few steps in the rocky face immediately below it. The weather promised well, but next day, September 19, was doubtful. We achieved the ascent indeed, taking 4.40 to the top (including halts), which was not bad time, considering that there was an enormous quantity of snow on the rocks, and that my friend was not much accustomed to the ascent of high mountains; but of the view the less said the better, as it was snowing on the summit, and we did not make a long stay there. The Sacripante hut will undoubtedly become the principal starting-point for the Viso; it is easily accessible from both Crissolo and Castel Delfino, but as the accommodation at the former village is infinitely better, Crissolo will always remain the head-quarters for all Viso explorers. On our return to Crissolo we found that Terry had gone out to meet us, and when he turned up it appeared that, while we had been rounding the base of a hillock, he had been climbing along the ridge to the summit, whence he in vain tried to espy us. However, no harm was done, and he seemed to have spent a very agreeable time by himself, despite entire inability to converse with any one save in various dialects of the Teutonic tongue. Another day I took my friends to see the Rio Martino cavern, which we all enjoyed very much. It seemed to me more striking than ever. We slept on the night of the 22nd at the Albergo Alpino on the Piano del Re, and found it very cold, as the autumn had come in early. Next day we passed through the Traversette tunnel into France, finding some difficulty in effecting a passage, owing to a coating of ice on the floor, and the utter impossibility of lighting a torch of any kind, because of the very strong draught.

Such up to this time have been my explorations around

Monte Viso. To absolute novelty they can lay but small claim, but my description of the attractive expeditions to be made in the district may possibly tempt some members of the Club to approach the great peak, which they have seen on the horizon. On all sides it is immediately surrounded by desolate wastes of stones, rivalling the dreariest parts of Dauphiné; but the views from the various summits have a distinct character of their own, and present old friends under an unusual aspect. I am not sanguine enough to hope to draw many people away from the great hunting grounds of Chamonix, Zermatt, and the Oberland; but should any one feel disposed to think of a trip in these regions, I shall be most happy to supply privately any further information in my power. Personally, I do not feel as if I had even now more than a partial knowledge of this magnificent mountain mass, and next summer will see me in its midst again, in the hope that by constant wooing of the great peak an unclouded view (including the great inland sea) may be vouchsafed to one of its most ardent and persevering admirers and worshippers.

The Ranges between the Viso and the Meidassa.

	Old Italian Map	New Italian Map	French Map	Bossoli's Panorama from Sanctuary of S. Chisaffredo
1	Le Sedie Cadreghe	—	—	La Mano (3,080 m.)
2	Visolotto	Visolotto (3,353 and 3,346 m.)	Petit Mont Viso (3,343 m.)	Visoletto (3,336 m.)
3	—	Punta Gastaldi (3,269 m.)	—	Pics Gastaldi (3,120 m.)
4	—	—	Visiolet (3,030 m.)	—
5	—	(2,970, 2,925, 2,930 m.)	(2,942 m.)	—
6	Col de Coulaon o Colour del Porco	Col del Colour del Porco (3,020 m.)	—	Col del Porco (3,010 m.)
7	—	(2,921 m.)	—	—
8	Roccie Fourioun	Rocce Fourioun (3,103 m.)	—	R. Fourioun (3,090 m.)
9	—	(3,113 m.)	(3,112 m.)	Monte di Marte (3,100 m.)
10	—	(3,070 m.)	—	—
11	Col della Traversetta	Colle Traversette (2,950 m.)	Galerie souterraine and la Traversette (transposed by a strange error)	Col de la Traversette (2,995 m.)
12	Buco del Viso	Buco di Viso	—	Tunnel du Viso (2,950 m.)

	Old Italian Map	New Italian Map	French Map	Bossoli's Panorama from Sanctuary of S. Chiaffredo
13	—	—	(3,051 m.) (point where ridge turns abruptly to W.)	—
14	Monte Granero (3,105 m.) (Meidassa di Viso)	M. Granero (3,170 m.)	—	Médasse (3,122 m.) (so called at Crissolo)
15	—	M. Meidassa (3,105 m.)	—	—

Note that neither 14 nor 15 are on the frontier, but are E. of the point 3,051, and overhang the Val Pellice to the N. Bourcet's old map marks the Monte Viso, the Col de Coulaon and the Col de Viso (= the Traversette). Consult on the whole subject the excellent remarks of M. Guillemin ('Annuaire du C. A. F.' iv. 583-4). The peaks 3 or 4 are usually called Viso di Vallante, and really form a single mass.

THE SANCTUARY OF SAN CHIAFFREDO.

BY DOUGLAS W. FRESHFIELD.

[THE following pages were written in 1878 as the introduction to a paper which is now superseded by Mr. Coolidge's subsequent ascents. The part of it referring to the Vaudois valleys may be published some day among 'Notes on Old Tracks.']

In a recent paper in which I gave some hints as to the exploration of the Maritime Alps—an exploration which has since been successfully carried on by Mr. Coolidge—I spoke of the glorious appearance of Monte Viso seen from among the walled and towered towns which cluster on the plain of Piedmont at the foot of the Western Alps, and I promised at another time to turn towards the mountain. This promise I now fulfil.

A branch line from the Cuneo Railway leads up in some 2½ hours from Turin to Saluzzo. I shall not attempt to describe in words of my own the approach to that town. The landscape has been drawn long ago in lines which bring before us now, as well as they did in the 14th century, its great features—the white mountain, and the rich town-studded plain. I cannot resist quoting Chaucer:—

Ther is at the west ende of Itaille,
Doun at the root of Vesulus the colde,
A lusty playn, abundaunt of vitaille,
Wher many a tour & toun thou maist byholde
That foundid were in tyme of fadres old,
And many anothir delitable sight,
And Saluces is this noble country hight.

Saluzzo, however, is not properly a mountain town, and we may pass on at once to Paesana, where for those who are following the Po, the

carriage road ends and the mountains begin. It is at this village or in its neighbourhood that the painter who desires to do justice to Monte Viso should fix his camp.

Near at hand spreads a fertile valley full of homesteads, chestnuts, maize, trailing vines, and all the usual incidents of Italian landscape. The mountains which inclose it are bold without being bare; they rise, ridge beyond ridge, here a rugged edge of cliff, there a beech-crowned knoll, forming many succeeding distances. Above them all, alone in the sky, soars the whole height of Monte Viso. It presents itself as the same noble pyramid which has been a familiar feature in the view from so many Alpine peaks, unaltered except in grandeur by approach. The path to Crissolo and San Chiaffredo lies along the valley beside the bends of the dashing stream amongst charming scenery. Towards evening in September two processions meet on it. One, made up of families on foot, with their babies strapped on to donkeys, climbs slowly upwards, singing or reciting prayers and hymns by the way. The other, decked with bright tufts and medals, the tokens of pilgrimage, is returning joyfully to the plain.

Beyond a waters-meet the white church and hospice are seen, high perched on the right-hand hill. The path accompanies the stream, below and beyond the Sanctuary, to the hamlet of Crissolo, one of the highest in the Po valley. It is made up of several groups of houses, the chief of which consists of a tiny town-hall and a number of humble inns. The town-hall bears inscriptions recording the visits of royal princes, Alpine Clubs, and the members of a Boatmen's Society from Turin, on their way to explore their river from source to sea.

From the village, a path, at first steep, leads back in about ten minutes to the Sanctuary.

The new laws of the Italian kingdom with respect to the property of religious corporations have in many parts of the Alps produced a change to the advantage of travellers. Thus, at Pesio, on the north slopes of the Maritime Alps, at Oropa near Biella, and here at Crissolo, the extensive buildings belonging to the Church have been converted into inns, or, as Italians call them, 'Stabilimenti Alpini,' places of bodily and mental refreshment for the citizens of the plain, who cannot afford to spend their whole lives in selfish isolation, but are glad enough of a few weeks' refuge from daily work and the southern sun.

Unlike his great tributaries, the Po stays but for a short time among the Alps. Within twelve miles of its birthplace the river is flowing peaceably amongst verdant foothills; within twenty, it is already in the great plain. Hence its source, marked out as it were by the noble pyramid of Monte Viso, has been since Roman times known and accessible. To the country people it is a much-frequented place of pilgrimage. Their devotion is now paid to the Virgin and a special saint of obscure history. But it is difficult not to recognise the continuance under another title of an older worship. 'Alla beata Vergine' is the dedication of one village inn, 'Ai Sorgenti del Po' of its next neighbour. San Chiaffredo would hardly have had so many devotees except as the successor of the great river-god Eridanus.

The Sanctuary consists of a long plain range of buildings facing

southwards to the valley. Beyond the inn, and at the head of the terrace, is the church, a building of some age, but small architectural pretensions. On the right hand on entering is the shrine, a circular chapel surrounded by an iron railing, within which are exhibited the relics of the saint. Round and round it in a constantly renewed circle tramp the pilgrims muttering their prayers and Aves. On the walls hang the trophies of the saint, evidences of his miraculous gifts, or of the power of faith on a certain class of physical ailments, an array of antique crutches and extremely modern and improved trusses, which it seems a pity should be thus wasted on a whitewashed church-wall!

The terrace is alive morning and evening with peasants who throng the stalls which supply pictures of the martial saint, medals, and little gay tufts. San Chiaffredo having been a soldier himself, gives Cæsar his due, and is liberal enough not to object to the red, white, and green colours which are worn as a sign of pilgrimage.

The natural attractions of the place are great, but the accommodation must be improved before English travellers will frequent the 'Stabilimento Alpino.' Those who care for what northerners think the decencies of life will only make it a halting-place for a night. The mountaineer going to Monte Viso finds a clean bed, a good dinner and wine, and does not care to look further. But the furniture, floors, and staircases, seem to have taken a monkish vow never to submit to pail or brush, from which no secularisation can release them. Moreover, during September, the month of pilgrimage, the eating-rooms (there are half a dozen) are taken entire possession of by a crowd of peasantry, well-behaved enough, but decidedly noisy. In short, if the courteous host means his house to be a resort of travellers, he must thoroughly cleanse and refurnish part of it, and reserve it for their use. It would be wrong, however, to encourage speculation by holding out false hopes of foreign patronage. A few strangers would doubtless be attracted, but for some years he must rely mainly on the support of his own countrymen. Crissolo is too far from the common round of English tourists to come suddenly into vogue.

The chapel and inn are built under the crest of a long thin low spur which runs out from the higher mountains, and delays the meeting of the Po and its first affluent. Its northern banks are richly wooded, and pleasant shady paths might be made along them; but the view is to the S. and W. The young stream of the Po leaps along the bottom of a narrow winding glen, thickly draped with copses, now gilded here and there by the recent frosts. Above the woods spread the broad bare downs, which serve as a pedestal to the great pyramid of Monte Viso, seen here in all its splendour and symmetry of form with a picturesque black rock, known as the Visolotto, by its side.

Through the opening between the hills towards which the waters flow is seen a portion of the plain of Piedmont, pale and phantomlike in the morning hours, towards evening distinct with fields and hills and a white cliff which may easily be taken for a town. The only weak point in the landscape—nature is seldom above criticism—is the character of the pedestal on which Monte Viso is raised. The romantic sharp-crested ridges seen from Paesana have disappeared. The broad

downs, which stretch between the eyes and the great pyramid, require the cross lights and shadows of a low sun to show to advantage the folds of velvet turf which cover them. At noonday they interpose a tame and prosaic bar between the majestic peak and the romantic glen. Man, however, and not nature, is after all responsible for their bareness.

It was my fate to see more of Chiaffredo than I had intended, for a severe attack of neuralgia laid me up for twenty-four hours, and I was forced to allow my companion, Mr. C. C. Tucker, and François Devouassoud to climb the Viso without me.

Although September had not long begun, the air at this height (4,728 feet) was too chilly for me to venture to sit long out of doors, and the hours were passed at my window, through which the Viso persisted in staring in a way which under the circumstances was unkind. Once I set out for the cavern on the opposite side of the valley, the Grotta del Rio Martino, but my courage failed me. However, even had I seen it, I could scarcely have ventured to describe it, for, according to a local writer, 'he who would speak of its form and its beauties must have a hand used at once to the geologist's hammer and the painter's brush. Nor is this enough. To give expression to the secret emotions caused by its visit, there is need in truth of the sweet sensitiveness of the poet and the productive imagination of the romantic author!' So I am not sorry to leave for my friend the Editor the privilege of playing '*vates sacer*' to this most compendious of caverns.

The impressions my day and a half's solitude has left on my memory are chequered. There were moments of delight when the plain shone like a golden sea, before the sun sank below the hills and the valley depths turned black between the purple hills. The extraordinarily pure and bright air might have made mere living a pleasure; but it seemed at the same time to add to one's capacity for toothache. The advance of the long line of peasants, as they wound in and out of the rocks along a mile or two of rough road, was pleasant to the eyes; and the sound of their hymns, as, mingled with the bells of Crissolo, they rose to the ears, was most romantic. But Vespers were too soon at an end, and then, the Madonna and San Chiaffredo satisfied, the whole first floor of the inn was invaded by the peasantry. Each of the six or seven rooms, which open one from another, had its three or four tables full. Round each table a little swarm of four to ten youths and girls clustered. A couple of open wine-flasks were set down between them, and then off they started in part-singing, each room having at least one set perpetually going. 'Maria' was still the general burden of their songs, but there was a good deal also about profane love. They all behaved admirably; they did not get tipsy or romp or quarrel, but their melodies were the reverse of soothing to disordered nerves.

The literature of Crissolo naturally did not offer any prolonged occupation; the story of the saint under whose patronage the Sanctuary lies may be got up pretty thoroughly in a few hours and told in as many minutes. His name appears to be a popular corruption of Godfrey, Giotfredus. Sanctus Giotfredus was a soldier of the Theban legion.

Towards the close of the 3rd century the Emperor Maximian had need of some good soldiers in Gaul, and this legion, numbering nearly 7,000 men, was brought from the East. The soldiers had crossed the Alps and were encamped at the modern St. Maurice in the Rhone valley. The Emperor was at Octodurum, the modern Martigny. Some suspicion was thrown on the fidelity of the troops, who in their sojourn in the East were reported to have become infected with new doctrines. They were required to sacrifice to the Emperor; and also, it is said, to march against the Christians in Gaul instead of against the Belgic tribe they had been summoned to subdue. The Theban legion protested their loyalty, and at the same time refused to submit. Twice they were decimated. When this cruel measure failed to break their spirit, the incensed Emperor surrounded them with other troops and slew them to a man.

So the best authorities relate. But an obvious difficulty arises. If the Thebans all died round their eagles at St. Maurice, how is it that their bones are not there also, instead of lying 'scattered o'er the Alpine mountains cold' in many distant spots? Even martyrs, it may be argued, may run away, if by so doing 'they live to preach another day,' and the text, 'If they persecute you in one city, flee into another,' has been seriously quoted as an authority for such conduct. But this explanation does not satisfy the enthusiasm of the majority of S. Chiaffredo's Roman biographers. He and his companions S. Vitalis, S. Candidus, S. Victor, S. Magnus, and S. Constantius, it is assumed, were by some chance away from their regiment, on sick leave or in a rearguard, and so escaped the general slaughter, only to perish later. There is another version, according to which the saint's bones were brought hither from the Rhone valley by the faithful after his death, but this is not generally held authentic. Anyhow, we are required to believe that S. Chiaffredo was a soldier of the Theban legion, and that he is buried here at Crissolo.

How, we next inquire, was his tomb preserved or discovered?

'Once upon a time,' no nearer date can be assigned, a peasant girl was ploughing, with a yoke of oxen, the hillside on which the church now stands, when of a sudden the plough struck against a huge stone, and oxen, plough, and girl went over the edge and down the steep cliff which overhangs the glen of the Ciampagna. Marvellous to relate, no injury was caused by the fall. When the stone which had caused the accident was uncovered from the earth an inscription was found on it to the memory of San Chiaffredo, martyr under Diocletian and Maximian. It may be remarked in passing that other tombs have been found near the same spot which are referred by antiquaries to pre-Roman times.*

The first historical fact about the shrine seems to be that it was restored in the 8th century by Aripert, King of the Lombards. In succeeding centuries it grew in wealth and renown, thanks to donations

* Roman inscriptions found in the territory of Crissolo refer also to a Temple of Mercury. Such a 'heaven-kissing hill' as Monte Viso may well have served the messenger of the gods to light on.

of the Marquesses of Saluzzo, and the crowds of pilgrims. The present church is said to have been founded in A.D. 1444. About A.D. 1500, the heretics of the valleys to the north began to be troublesome. The injuries inflicted by them were repaired in 1551 by the French, and the lilies of France are still visible on the columns of the nave. The precious bones of the saint were transferred in 1593 to the Castle of Revello, and remained there till 1642, when they were again transported to Saluzzo; only a few fragments (a rib and a hand) being still left at the Sanctuary for the adoration of the faithful. 'On June 12, 1655,' writes Bishop Agostino della Chiesa, 'the heretics burst out of Val di Lucerna, sacked Crissolo, broke violently into parish church and Sanctuary, overthrew the statue of the Virgin with their arquebuses, smashed shrines and pulpits, cast to the winds books and vestments.' The priest, foreseeing their peril, and fearing, I suppose, lest the saint might not think so small a part of himself worth a miracle, had taken the precaution of hiding the rib and hand in a more remote chapel. Even there they did not escape the impious fury of the Vaudois, who broke open the altar in which they had been deposited, and contemptuously scattered the bones, not however so thoroughly but that they were recoverable by the pious care of their guardian. A few days later the marauders were properly punished, being caught on another of their forays by the horsemen of the Duke of Savoy and cut to pieces.*

Besides miraculous cures, the saint's sanctity has been attested by more than one remarkable event. Two large caldrons in which he was wont to make soup, with his companions, have been several times stolen, but each time have returned of their own accord to the shrine. Again, a thief trying to break open a cupboard containing valuable objects, pulled it over on himself, so that he could not escape—which was clearly a very remarkable miracle, and does not appear to be disputed in any quarter.

In 1833 the annual number of pilgrims to the shrine of San Chiaffredo was about 6,000, and at the present time there may well be as many, if it is as frequented during the whole month of September as on the three days of our stay.

* As we are giving the Roman view of the Vaudois, it is perhaps fair to quote an impartial tribute to them from a Swiss writer of the sixteenth century. It is curious to see how Rome had recourse to the old calumnies which had served against her own founders.

'Sunt et alia itinera inter montem Genebræ et Alpes Maritimas, veluti per vallem Perossæ, item Lusernam vallem et Angroniam et collem Crucis, quarum vallium incolæ vulgò Christiani nominantur: credo quod neglectâ Romani Pontificis auctoritate et contemptis monachorum societatibus se Christo uni et soli, in quem baptizati essent, addictos dicerent et ab eo nuncupari vellent. De his quidam multa portentosa memoriæ prodiderunt, atque ipsos impura et libidinosa sacra, et promiscuos in his concubitus exercere scripserunt, quæ tamen falsa et conficta esse cum ipsi arguunt, tum etiam omnes qui cum illis commercium exercent, qui viros probos et moderatos esse testantur.'—Simler, pp. 233-4, *De Alpibus* (written 1567, published 1633).

ALPINE NOTES.

ALPINE INNS AND HUTS.—A new inn (*Hôtel du Dôme*) is to be opened at Fee (*Saasthal*) early next July. It is a substantially built house, containing sixty bedrooms. The site is close to the village church, three-quarters of an hour above Saas, and the cost is to be borne by the Commune. An Alpine inn in the neighbourhood of such magnificent scenery has long been required, and will be very useful to all visitors of the district. The landlord of the inn at Ried (*Lötschthal*) is building a hut in a depression on the left bank of the Nest glacier, about 3 hrs. above Ried. It will greatly shorten the time required for the ascent of the Bietschhorn. F. T. WETHERED.

Saas.—As the inn here at one time did not enjoy a good reputation, and is liable to further disparagement by comparison with the new *hôtel* at Fee, it is due to its present most deserving and obliging owners to record its improvement in their hands. It is now, for one of the smaller mountain inns, both cheap and comfortable, the pension rate being only six francs. The landlord is a good and experienced guide.

Visp.—The *Hôtel des Alpes* by the railway station is a clean and cheap little inn, which, by its airy situation, removes the unpleasantness of sleeping at Visp.

Vals.—*Valserthal.*—A deserving little inn, 'Piz Aul,' cheap and clean, and with a particularly obliging landlord. Excellent trout was to be had (1879). This pretty and little known valley deserves a visit. I found a very interesting walk from Hinterrhein to Disentis by the Valser, Vrin, and Somvix valleys. By the Fanella Pass, a variation of the Valserberg recommended by Mr. Ball, with a good view from point 2,839 mètres; west of it, about 5 hrs. to Vals. To Vrin (a very poor village inn), by Furth, about 6 hrs. From Vrin over Piz Cavel (9,659 feet) to Tenniger Bad (6 hrs.?). The path leaves that of the Diesrut Pass at Buzatsch, keeping low down by the stream to the Ramosa Alp. From the top is an interesting panorama. The descent is down a snow slope to the Fuorcla de Cavel (which may be also easily reached by the same route without ascending the peak, or by Val Cavel). At the quaint and primitive baths is homely accommodation (about 2½ hrs. from Disentis).

Al Ponte, Val Devera.—There is now at this pretty Alp a little inn where night quarters may be had. A. CUST.

The *Stabilimento* at Ceresole (*Val Locana*) has been enlarged by the addition of a capacious *salle à manger*, and the landlady of the *Hôtel de la Grivola* at Cogne proposes to build a large dining-room in the garden on the sunny side of the house, commanding fine views up the Valnoutey. G. YELD.

Travellers in the Cottians may be glad to know that very fair accommodation may be had at the Croce Bianca at Césanne and at the Refuge Isoard on the col of the same name. Pilatone's Albergò del Gallo at Crissolo (the starting point for Monte Viso) can be recommended, and is already largely frequented by Italians seeking to escape from the heat of the plain. The Albergò Alpino on the Piano

del Re (five minutes from the sources of the Po) is admirably situated, and offers fair sleeping accommodation and food; the landlords—the brothers Genre—are very obliging, and the prices moderate, especially when it is remembered that the inn is at a height of 6,696 feet above the sea. The Sacripante hut of the Turin Section of the Italian Club was opened last summer. It is about 5 hrs. from Crissolo or Castel Delfino, and not far from the Fontana di Sacripante. It is built on a shelf of rock and can only be reached conveniently at present by a détour, though a few steps cut in a rock wall would make it much more accessible. It is furnished in the usual way, and is quite water- and wind-tight. From it the top of the Viso may be easily reached in $3\frac{1}{2}$ hrs.

In Dauphiné, I found that the alterations of the Hôtel Juge at La Grave had been completed, there being now a large new dining-room and a small terrace. The Hôtel de l'Ours at Briançon has changed hands, and is not improved by the change. The Restaurant de la Gare at Clelles (starting point for the Mont Aiguille), and the Hôtel Jouglaud at Orcières, are tolerable country inns; while the Hôtel de la Poste at Corps aspires, not without some degree of success, to be more. The Hôtel des Alpes (Chez Bonnafox) at Mens, a great Protestant centre in bygone days, offers fair accommodation. The auberge Chez Arlaud at St. Jean d'Arves and the chalet of the Société des Touristes du Dauphiné (close to which the Society has just erected a second building with four rooms) on the plateau of the Sept Laux offer sufficient if somewhat rough accommodation, but in the case of the latter the prices are decidedly too high, even when we take into account its distance from a village (6 hours) and great elevation (7,159 feet).

The new *Refuge de la Pilatte* (also called Refuge du Carrelet) was opened last summer. It lies on the right bank of the torrent coming down from the Glacier du Vallon, close to the point where it issues into the valley. When I slept there in the middle of July, the roof was wanting, but was to be constructed in a few days. The hut is a fair-sized one, and is very substantially built. It is well placed as a starting point for the Ecrins by the new route, and for the various passes into the Vallouise and the Val Godemar.

Fair quarters may be obtained at Favre's Hôtel de la Vanoise at Pralognan, the Alpine centre of the Tarentaise: the proprietor has recently constructed a large building containing a dining-room and several other rooms exclusively reserved for travellers. W. A. B. C.

The Italian Club some years ago constructed a refuge an hour from the summit of the Marmolata, but being hewn out of the rock it is inconvenient and small. Herr Finazzer of Livinalongo has now built a little inn or hut near the Fedaja huts. It contains six beds and twenty mattresses, and the proprietor intends to station there during the summer season two persons to supply provisions and shelter at a moderate rate. It was visited by about 200 tourists last summer. It is proposed to construct next summer a new hut on the Italian side of the Matterhorn at the foot of the 'Great Tower;' but it is feared that the funds in hand may not suffice to defray the expenses of transport, &c., the timber being already prepared.

The Turin Section of the same Club has also opened the Rifugio

del Crot del Ciausiné, at the head of the Val d'Ala (Valli di Lanzo), which will probably help to make this district better known to climbers.

The Società degli Alpinisti Tridentini has built a hut (their first) on the Molveno side of the Bocca di Brenta (20 minutes east of the pass), intended to facilitate the ascent of the Cima Tosa. There is no charge for using this hut. The same Society hope to open next August huts at the head of the Val del Laris and of the Val della Mare, to facilitate more especially ascents of the Caré Alto and Monte Cevedale.

To the 'Alpenclub Oesterreich' we owe the 'Wienerhütte,' opened last August. It is situated at the head of the Pfitscherthal (Zillerthal district). It is meant especially to shorten the ascent of the Hochfeiler, the monarch of the district. Twenty persons can find shelter in it, and it is said to be very well fitted up. In the same district the Prague Section of the German Club has built the Olperer hut above Breitlahner (cf. vol. x. 102).

The Swiss Club have built a hut near the Corbassière glacier.

In Dauphiné the Isère Section of the French Alpine Club has at last succeeded in purchasing a hut in the Combe de la Lavey, which is fitted up in the usual way and was opened at the end of August. The Refuges Lombard (for the S. Aig. d'Arves), Joinville (near Lac de l'Eychauda), and Chancel (near Monétier) have been completely finished by the Briançon Section, and were used by several parties last summer.

This does not pretend to be a complete list of all the new huts opened or in progress during the past year; but the details given above will serve to show the great and increasing activity of the foreign clubs.

THE ROUTES UP THE ROSSBODENHORN.—The published accounts of ascents of the Rossbodehorn are so short—sometimes conflicting, sometimes merely unintelligible—that in the 'Zermatt Pocket Book' I was only able to pay the mountain the beggarly compliment of a few lines. Good fortune and research of the conversational kind have brought various facts to light which perhaps, if printed together, may not be altogether without interest. I am unable to set any rational account of the route by the S.W. arête—that ordinarily followed—though one would have thought that amongst the numerous climbers who have passed that way there must have been one provided with a watch and a pencil.

Rossbodehorn, 13,085 ft.—3,988 mètres.

1. By the N.W. arête—

a. From the Rossboden Pass (Dr. Burckhardt, July 26, 1880—private information). Follow the ridge all the way, going over the peak 3,537 mètres, and reaching the summit in about 3 hrs.

b. From the Fletschhorn glacier. (Information received from Mr. Cust.)

Ascend from Saas to the Trift Alp, cross the bridge over the Trift Bach, and mount tree-covered slopes to the upper level, where a second bridge must be crossed. Reach the moraines at the lower foot of the glacier S.W. of the Rossbodehorn and, crossing the stream, gain the ice as soon as possible, in 2 hrs. from Saas. The glacier rounds over to a level plateau stretching to the ice-falls of its two branches, which are divided from each other by the rocks at the foot of the S.W. arête of the mountain. Bear to the left towards the rocks forming the right

bank of the north ice-fall. There is a stony gully in these rather to your left as you stand looking at the ice-fall. The foot of the gully will be reached in 1 hr. from the foot of the ice, and it may be ascended in $\frac{3}{4}$ hr. more. If the snow on the N.W. face of the peak is in good condition, it appears to be well to take to it at once on reaching the top of the gully; if it is not, leave the gully about three-quarters of the way up and bear to your right, mounting by a sort of rib of easy rocks and thus reaching the N.W. snow-face higher up. Once on the face, which is much crevassed and abounds in steep slopes, go across it, mounting all the time till you get on to the N.W. arête, and by it reach the summit in $1\frac{1}{4}$ hr. from the top of the stone gully. Total ascent—5 hrs.

In the descent it is not easy to hit the top of the rock rib or stone gully, though it is impossible to go far wrong. The former may be seen from the slopes of the N.W. face, but it scarcely projects above the snow. Descent to Saas by this route, $3\frac{1}{2}$ hrs.

2. By the E. arête. This arête is a short snow ridge, connecting the summit with the point 3,850 m.; it is from the latter that the N.E., E., S.E., and S.W. arêtes radiate.

a. Reached from Simpeln by the S.E. arête.*

Reach the foot of the Laquin glacier by the Fletschjoch route. Ascend by the hard and often loose rocks of the S.E. arête to the point 3,850 m., and then pass along the easy snow ridge in 20 m. to the highest point. Total time from Simpeln, 9 hrs.

b. From Saas.

Follow route 1 b to the glacier, and mount it towards the ice-fall of the N. branch. Get off the ice on to the rocks on the l. bank of the ice-fall by a difficult scramble and ascend them, bearing to the r., so as to be ready to exchange them for the level plateau of snow above the ice-fall of the S. branch as soon as that is surmounted. The ascent of the rocks will take 1 h. Now go due E. over level snow towards the Fletschjoch, which will be gained in 1 h. Thence turn north up easy slopes to the short E. arête, which should be struck about 5 m. below the highest point, and an easy hour from the col.

c. From Simpeln by the N.E. arête.†

Starting from Rossboden châtelets, keep along the left side of the Rossboden glacier for three-quarters of an hour, and then cross it to the base of a spur falling northwards from the N.E. ridge of the mountain. Ascend along the left side of this spur for $1\frac{1}{2}$ hour, then along its crest, or to the right of it, for $1\frac{1}{2}$ hour more till the N.E. arête is reached. Following this for about 1 hr. and ascending a short steep snow-slope, the point 3,850 will be attained, and from it the summit will be won in about 20 minutes more. 'The whole route is delightfully simple and easy.' It is possible that some such route as this was followed by Herr Amherdt (August 28, 1854; 'S. A. C. Jahrb.' vi. 512), of whose expedition no details have been recorded.

3. By the S.W. arête.

* Messrs. Cox & Gardiner, July 5, 1876; *Alpine Journal*, viii. 106, 150.

† Mr. J. Eccles, August 12, 1881; *ibid.* x. 405.

Get on to the rocks at the foot of the S.W. arête, as in Route 2 b, and follow them all the way to the summit. W. M. CONWAY.

TÊTE DU SALUDE.—It will be recollected that in 1879 and 1880 two parties claimed to have reached a point which they called by this name ('A. J.' x. 94-5). Their accounts could only be reconciled by supposing that they referred to different summits, and my experience last summer enables me to confirm this conjecture. On July 3, having ascended direct from the 'great chasm' to the S. mentioned by Mr. Cust, I found that gentleman's card on the peak he had climbed. This point is really the lowest of the three pinnacles of the Loranoure. According to the guide Gaspard, it is this summit which, properly speaking, is the Tête du Salude, a name which has been wrongly transferred by the makers of the French map to a point (that ascended by M. Vincent) much farther N. and very much lower. The three peaks of the Loranoure, when seen from different directions, are almost as confusing as the three summits of the Pic d'Olan were to the early explorers of Dauphiné. W. A. B. COOLIDGE.

ROCHER DE PLASSAS (9,400 ft.).—Pralognan has already found its Gornegrat in the local Mont Blanc. The Rocher de Plassas may, I think, claim to be its Mettelhorn. If we may believe my immediate predecessors—a French party—it had never been climbed till 1881, and it is certain that the French engineers chose the lower and much less eligible Dent Portetta for their signal, which looks as if they had thought the higher point inaccessible. Its bold crags are in fine weather the most conspicuous near object in the view from Pralognan, rising immediately opposite the village.

To us, however, they were not conspicuous. When (about 9 A.M., September 9 last) François Devouassoud and I left the inn, clouds hung low on all the slopes, and so unpromising was the weather that François declined to take any provisions or his axe, and insisted on borrowing two umbrellas, marching all day with one under each arm.

We soon turned up the steep zigzags which lead to the haybarns of Les Saulces, where peasants were engaged in the incongruous task of cutting grass, off which the snow had first to be shaken. The mists had now lifted sufficiently to encourage us to go on to the col lying N. of Mont Blanc de Pralognan.

Between the huts and the ridge we remarked a profusion of *Edelweiss*, which I have hardly seen equalled unless on the Sea Bianca near Crissolo, and the extraordinary number and depth of the conical cavities formed in the limestone rock, which here take the place of the parallel fissures of the Sixt limestone. The adjacent peaks were now clear. The local Mont Blanc, however, did not tempt me in comparison to the higher and bolder crag on our right, which we now saw for the first time. Half an hour's walk among fresh snow and rocks brought us to the point visible from below, which proved to be the S. and lower end of a long and sharp crest, at the farther end of which a stoneman indicated the summit. The ridge is easy where practicable, but in two places it is broken by gaps, to turn which it is necessary to descend on to the Pralognan face. The view from the top embraces all the neighbouring peaks, and the broad green alps and warm-coloured

hills seen above and beyond Brides add by contrast to the savage grandeur of the rocks and glaciers of the Vanoise and Grande Casse. Mists deprived us of any panorama, but the map sufficiently proclaims the isolation, and therefore the advantages of the Rocher de Pléssas.

In returning we entirely avoided the ridge by descending directly from the summit a very steep grass slope, until it was easy to traverse at a level above the precipices on the Pralognan side to the southern end of the crest. Here we crossed the ridge of the mountain, and keeping under the western cliffs of the Rocher de Pléssas, and above the Petite Val, traversed rich pasturages to the northern base of the Dent Portetta, where we recrossed the chain, finding an easy and pleasant descent to the road 20 minutes below Pralognan.

The excursion occupied in all some seven hours' walking. It has no difficulty for steady climbers, but is not to be recommended to persons unused to mountains or subject to giddiness. D. W. FRESHFIELD.

COL D'OTEMMA.—Mr. J. B. Parish and I, with Jean Maître as guide, crossed, on August 25 last, a pass which is apparently to be identified with the Col d'Otemma marked on the Federal map (original survey), though in position different, being a gap E. instead of W. of the rocky point shown on the map in the centre of the snowy ridge between the Bec de Blancien and La Sciasse. The descent on the south was by an easy snow gully, whereas that from the spot indicated on the map looked comparatively difficult.

We ascended the eminence W. of the col under the impression that it was the highest summit of the Sciasse, but an adjoining eminence further W., though lower, appears to be that so called.

After the descent of the considerable moraines of the Gl. de la Sciasse, a path was found on the right bank of the stream leading to the chalets of Les Boetta in about $2\frac{3}{4}$ hrs. from the col. From a bridge below these we found an upper path round the hill-side and across a brow towards Prarayen. The pass forms a fine and easy route from Arolla to Bionaz, requiring, with snow in good condition, say $6\frac{3}{4}$ hrs. up, $3\frac{1}{2}$ down. The view is interesting. A. CUST.

PHENOMENON ON THE AROLLA GLACIER.—On the Arolla glacier, a few hundred yards from its foot, and nearly midway between the two banks, is a large ice-cone covered with stones. Every stone in the heap is water-worn; many of them fully deserve the name of pebbles. And yet the stones of the moraines near at hand, like those of most moraines, are angular; it is the exception to find any which have their corners rounded off. By what process came that one little heap of stones to be smoothed and rounded, when the other stones on the same glacier, fallen from the same rocks, have escaped? One naturally thinks of a *moulin*; but there are no surface streams for a long distance up the glacier, in the line in which these stones must have descended. They must, I think, from their position, have fallen originally above the slight ice-fall due north of Mont Collon. But if they had been ground in a *moulin* on the higher level of the glacier, one would think they must have been dispersed in descending even a slight fall.

H. B. GEORGE.

DEATH OF MONSIEUR DESOR.—We regret to announce the death on

February 22 last of Mons. Edouard Desor, whose name is so well known in connection with early Alpine history. Born in 1811 of a refugee Huguenot family which had settled in Hessen-Homburg, he originally devoted himself to the profession of the law, but at the instance of Elie de Beaumont abandoned it for the study of geology, and executed a French translation of Ritter's 'Erdkunde.' Having been introduced to Agassiz of Neuchâtel by Prof. Vogt of Bern, he became a Neuchâtelois by adoption, and took an active part in the remarkable observations on glacial phenomena conducted by Agassiz, Duchatlier, and other scientific men, on the Unteraar Glacier, 1841-4, with which are associated the construction of the Hôtel des Neuchâtelois under a block of the moraine, and the Pavillon Dollfus Ausset (1845). On August 28, 1841, with his two friends and the late Principal Forbes, he made the fourth successful ascent of the Jungfrau. On August 8, 1842, with Escher von der Linth and Gérard he made the first ascent of the Lauteraarhorn, the lower end of the Schreckhorn ridge; and on August 27, 1844, with Dolfuss and others, the first ascent of the Rosenhorn (one of the Wetterhörner), ascending by way of the Gauli Glacier, and descending by the way of the Weitsattel and Renfen Glacier to the Urbachthal. Full accounts of his Alpine explorations and observations appeared in his 'Excursions et Séjours dans les Glaciers' (1844) and 'Nouvelles Excursions et Séjours dans les Glaciers' (1845). He went to America in 1847 with Agassiz, but when the latter refused to admit his claim as an independent researcher, regarding him still as a pupil, he separated from him, and after holding several geological posts in Pennsylvania, returned in 1852, on the death of his brother, who left him a considerable fortune, to settle down at Neuchâtel, and devoted himself to Swiss politics, in which he played a great part. This interfered with his scientific labours, though he explored the Sahara with Escher von der Linth. As a geologist he attained a high rank by his contributions to various questions of physical geology, stratigraphy, and palæontology, devoting himself in the latter department to the study of the Echinoidea. Among his other works we may mention 'Système glaciaire, ou Nouvelles Etudes et Expériences sur les Glaciers actuels' (in conjunction with Agassiz and Guizot in 1847), 'Der Gebirgsbau der Alpen' (1865), 'Echinologie Suisse' (1869-71), and 'Le Paysage Morainique' (1875).

WINTER EXPEDITIONS IN THE ALPS.—Since the publication of our last number, many remarkable winter expeditions have been reported. First in date among these comes the splendid series of 'courses' made by Mr. C. D. Cunningham, the following details as to which are chiefly taken from an article by that gentleman in the pages of a contemporary. He went up to the Grands Mulets on January 20 with the intention of attempting Mont Blanc, the ascent of which in winter has hitherto been accomplished but once—by Miss Straton on January 31, 1876; but the snow was so very heavy that it was resolved to defer the attempt, and the party spent the next week in making the 'tour du Mont Blanc' by the Bonhomme, Little S. Bernard, and Col du Géant, the weather being very fine and the difficulties encountered apparently insignificant. On January 29 Mr. Cunningham once more slept at the

Grands Mulets, finding the snow hard and firm. On the 30th his party, consisting of himself with Léon Simond, Edouard Cupelin, and Ami Boissonney, started at 4 A.M., reached the 'Corridor' about noon, and the summit of Mont Blanc at 2.30 P.M. Severe cold was experienced in the 'Corridor,' but the temperature on top is described as being that of a greenhouse on a winter's day. The view was very grand and extremely clear, except in the direction of Geneva. Starting again at 3 P.M., the Grands Mulets was regained about 7 P.M., the descent to Chamonix being effected the next morning. Mr. Cunningham, on February 1, made the ascent of the Buet, in company with a number of members of the Mont Blanc section of the French A. C. Leaving Chamonix at 2 A.M., the Pierre à Bérard was reached at 9.30, but, owing to the very soft state of the snow, the summit was not reached till 3.35 (thermometer -4° centigrade). The view again was unclouded and of great magnificence. Chamonix was re-entered at 11.20 the same evening. Mr. Cunningham then paid a visit to Zermatt (crossing the Théodule), and, returning to Chamonix, on February 15 made the ascent of the Aiguille du Moine.

A most daring expedition is the crossing of the Matterhorn by Signor Vittorio Sella on March 17-8 last. Signor Sella had already made two attempts in February (on one of which the Italian hut was attained). Accompanied by J. A. and Louis Carrel he left the Bril inn at 11 P.M. on March 16, the night being very fine. The Glacier du Lion was gained just before 3 A.M., the snow near it being in a very powdery condition, and the Col du Lion reached at 6 A.M., the party up to this point having walked by lantern-light. The rocks were then attacked, and, says Signor Sella, 'no extraordinary difficulty' was encountered, so that at 10 A.M. the party reached the Pic Tyndall and halted for breakfast. The passage of the ridge was somewhat awkward, but the rocks of the final peak were free from snow, and the summit was gained at 2 P.M. The air was perfectly still and the view cloudless. A flag was hoisted, which was seen from Zermatt. After a short halt the descent of the Zermatt face was commenced, hardly any snow being found on the arête. This side of the mountain was already in the shade, but the way was fairly easy until after the 'shoulder' was passed. From that point numerous serious difficulties had to be overcome, the frozen-in stones giving great trouble. The Swiss hut was reached at 7.30 P.M., and after a very uncomfortable night Zermatt gained the next day. On March 19 the party recrossed into Italy by the Théodule. Signor Sella states that he suffered scarcely at all from the cold, save near the Glacier du Lion. This expedition is beyond a doubt the most remarkable that has ever been made during the winter season, and on behalf of the Alpine Club we most warmly congratulate Signor Sella on his magnificent feat.

On April 8 Prof. Wach of Leipzig with Christian Almer ascended the Wetterhorn in 4 hours from the hut. Snow in excellent condition. On February 8 an Italian party ascended the Ciamarella (3,698 mètres), one of the chief summits of the Levanna group.

Early in February Herr Brun climbed the Vorab (3,025 mètres) from Flims, and on February 3 Herr A. Rzewuski and Pfarrer Gregori, of

Berglin, ascended Piz Albula (Piz Uertsch 8,272 mètres), the temperature on top being -10° centigrade; on February 13 two tourists from S. Gallen ascended the Tödi, and descended by the Porta da Spescha to Disentis; and on February 15 Herr Rzewuski ascended the Tinzenhorn (8,182 mètres) from Filisur, the snow being very soft.

In the Eastern Alps, the Gross Glockner was ascended on February 6, by six Heligenblut men, and the Hochfeiler on March 8, by Herr Julius Meurer and two friends. Even the great Dolomite peaks have not succeeded in repelling the winter invader. Lieut. Paoletti, with San Vito guides, climbed on November 26 the Croda Marcora, or Sorapis (8,291 mètres), and on January 15 the Antelao (8,320 mètres 15 hours up). On February 5 Herr R. Issler alone with A. Lacedelli of Cortina repeated the ascent of the Antelao, taking 14 hours from Cortina (temperature on top -2° centigrade). Lieut. Paoletti, nothing daunted, made a successful attack on the fine peak of the Pelmo; and on February 21 Signor Alvera, with P. Dimai, gained the highest peak of the Monte Cristallo in $8\frac{1}{2}$ hours from Cortina.

Of another expedition Mr. E. T. Compton sends the following account:—'The ascent of the Zugspitze (8,116 mètres = 10,224 ft.), the highest summit of the Wetterstein group, and above Partenkirchen in S. Bavaria from the north side, which was first made (direct) by the writer in 1878, was undertaken by him with Johann Ostler, *vulgo* Koser, on January 28 this year.

'Leaving the inn at the Eibsee at 5 A.M., and traversing the Zugwald in utter darkness, we emerged before daybreak on the more open Thörlin track, where the snow began to be deep and "salzig," and reached the rocks under the Ehrwalder Köpfe, after some heavy wading, at 8.15. Here the crampons were buckled on, as the exposed rocks were here and there glazed, and one or two of the ledges which are perfectly simple in summer demanded care when covered with a sloping drift of still loose snow. After entering the Schneekahr the snow was in better condition, covering most of the entirely superfluous wire rope and ladder. Higher up, however, we had to resort to cutting steps, and did not reach the summit till 2.40 P.M.; the ascent occupying very nearly twice the time taken on the former occasion. The temperature at the top was -2° Réaum. in the shade, but warm sunshine and almost complete calm made it far more enjoyable than is usually the case in summer. The view at the same time, except over the plain, which was enveloped in low blue mist, was perfectly clear and most picturesque under the low sun. The snow being intolerably soft on the south side, we were forced to cut our way down rather to the westward of the usual route in the shade of a projecting buttress, passing the spot where Koser's brother lost his life three years ago. This had the additional disadvantage of involving two hours' laborious tramp across the Schneeferner ere we reached the Knorrhütte. In the hope of finding water we forced our way on by moonlight as far as the new hut on the Unteranger; but the Partnach was frozen and snowed up, so we made the excellent stove do double duty in providing snow water for culinary and ablutionary purposes.'

No winter has probably ever been signalized by so great a number

of Alpine ascents, a fact due partly to the mildness of the weather, and partly (we would fain hope) to an increasing appreciation of the Alps in their winter dress.

ALPINE ART.—Probably most lovers of the Alps have already admired Baroness Helga von Cramm's renderings of Alpine flowers, whether on Christmas cards or at the Art exhibition of the Alpine Club. This accomplished lady has lately published by subscription (apply to Mr. Samuel Jennings, 16 Duke Street, Manchester Square, W., price 1*l.* 1*s.*) a volume entitled 'Sunbeams from the Alpine Heights.' It is made up of twelve plates, on which are figured in colours after original sketches thirty-one of the most striking and best-known Alpine flowers. The brilliant hues of our old friends seem a little startling in this foggy climate of ours, but the sight of them recalls many pleasant days spent among the mountains, and increases our desire to revisit old haunts or explore new ones. By this publication Baroness von Cramm has conferred a great obligation on those who have once seen the glorious blossoms, all the wonders of which it is impossible to reproduce by artificial means, and she will open up a new world to those who have not yet had the good fortune to visit the mountains in early summer, when the Alpine meadows are carpeted with a many-hued assemblage of flowers.

Mr. W. F. Donkin's remarkable Alpine photographs are by this time so well known that it may seem almost impertinent to allude to them. But for the benefit of those members of the Club and foreign climbers who have not had the good luck to see the originals at one of the Club meetings, it may be useful to point out the most remarkable in the collection of the reduced size, a catalogue of which appeared in our November number. As curiosities and as in themselves very striking, those taken from the summits of the dome (Nos. 20 *a b*, 21 *a b*) and of the Weisshorn (No. 18 *a b*) undoubtedly take the first rank. But we confess that there are others which commend themselves even more strongly to us; *e.g.* the Matterhorn (No. 4 *b*), the Bridge in the Zermatt Valley (No. 11), the Rothhorn from the snow arête (No. 17), the wonderful glacier pictures of Monte Rosa (5 *b*) and of the Gorner Glacier (16), Monte Rosa from Macugnaga rising out of the clouds (No. 24 *a.*), the Gabelhorn and the Dent Blanche from the Mountet hut (35 *c d e*), the Péteret (40 *a*), and the Aiguille Verte (44). But the list must vary according to each man's individual preferences, and he will be most delighted and charmed who becomes the possessor of the whole series. Thanks to Mr. Donkin, we can live over again many stirring adventures among the high Alps, while wondering at the extreme patience and delicate skill which has enabled him to surpass all his predecessors in the line of Alpine photography, and to bring before us such 'counterfeit presentments' of our old friends. Ambitious persons may perhaps surprise Mr. Donkin's secret in the very interesting though brief description of the process he employs, which he has contributed to the 'Year Book of Photography' for 1882 (Piper and Castle, 5 Castle Street, Holborn). We hope soon to give our readers fuller information by publishing the interesting

paper on 'Alpine Photography' which he recently read before the Club.

PROFESSOR FOREL ON GLACIERS.—It is fair to Professor Forel to state that, in a subsequent number of the 'Archives,' published prior to the appearance in these pages of our notice of his article on glacier motion (p. 416), he had modified his theory in the direction suggested—that is, by making greater allowance for the effects of ablation and the increase in it which necessarily follows the descent of the glacier into warmer regions. We regret that the October number of the 'Archives,' containing Professor Forel's P.S., had not come before our reviewer when he wrote.

SWISS SKETCHES.—At the 'Graphic' Gallery, 190 Strand, there is now on view a large collection of water-colour drawings of Alpine scenery and people by Mr. W. L. Thomas. Mr. Thomas is the manager of the 'Graphic' newspaper. But visitors who go to his gallery expecting to see something in the sensational style we generally and not altogether unjustly associate with our illustrated newspapers will come away disappointed. Mr. Thomas knows Switzerland well; his exhibition is the fruit of 'ten years' holidays,' both in and out of the fashionable season; and he prefers to dwell on the native life of the country rather than on the incidents which attend the passage of the autumnal tourist. There is little in his collection to suggest the feats and perils of the Alps, and what there is is not striking. For a runaway diligence—if runaway diligences must be drawn—we prefer Gustave Doré; and we altogether object to the attempt to enforce the sad associations of the Matterhorn by exhibiting in the foreground of a sunny sketch of the mountain the lifeless body of a young traveller. We object the more because the particular foreground on which the victim has been projected is apparently the middle portion of the Gorner Glacier! Among the more ambitious landscapes a general view of the Falls of Schaffhausen and a clever literal drawing of the Gorge of Pfeffers may be singled out for praise. Many will be attracted also by a very singular and ingenious sketch of a difficult subject—a valley at the base of a mountain seen from the summit of the latter—the vale of Goldau from the Rigi-Kulm. But it is not in his larger works or in drawing the great peaks that Mr. Thomas' strength lies. The sense of distance and atmospheric gradation is here sometimes wanting. He seems most at home and happiest in small highly finished pictures of some village or lake scene among the lower mountains. Few artists have given so much care and feeling to the bright flowers and brighter sunshine of a Swiss garden, or of the 'Lake of Geneva on a hot day' (No. 32). There are plenty of illustrations too of Swiss life, its simple pathos and homely humour—the child among the flowery groves; the priest rolling with his own hands his wheelbarrow up his garden path; its labours varying with the season—the hay harvest in June, the descent of the timber sledges when the winter has smoothed all the paths with snow. Nor does Mr. Thomas refuse his pencil to tourists of the softer sex, to whom he offers ample reparation in his flattering portraits for the outrages of Parisian caricaturists.

D. W. F.

MR. WHYMPER'S EXPLORATIONS IN THE ANDES.—In my itinerary it has not been possible to include any reference to the results obtained on the journey. Amongst the principal may be mentioned :—

1. A series of angles taken by theodolite for the positions of the great peaks.
2. A series of observations of mercurial barometer for the altitudes of 110 places, and numerous observations by aneroid for intermediate points.
3. Observations on the boiling-point of water at great elevations, in comparison with readings of the mercurial barometer.
4. Observations on blood-temperature at great elevations.
5. A series of 100 photographs, including negatives of the summits of Chimborazo and Cotopaxi.
6. Collection of rock specimens, including samples of the rocks from all the highest points attained.
7. Zoological collections, amounting to about 8,000 specimens (probably about 1,000 species), including butterflies, beetles, &c., from 16,000 feet. Locality and altitude recorded in every instance.
8. Botanical collections from the highest positions visited; localities and altitudes recorded.
9. Collections of antiquities, amounting to more than 500 specimens, principally in pottery and stone.
10. Collections to illustrate the products of the country.

E. WHYMPER.

MOUNTAINEERING WITHOUT GUIDES.—The numerous splendid ascents without guides achieved of late years by some of the more enterprising members of the Club seem to have stimulated the zeal of their foreign rivals. A proof of this is the long list of expeditions in the Eastern Alps made by the brothers Zeigmondy (alone, or occasionally with a friend, but without guides) between July 14 and September 18 last. Among the more remarkable ascents are those of the Cevedale, Königspitze, Ortler (from the Hochjoch, descent to Sulden 16 hours' walking from the Il Pastore hut in the Zebruthal), Fusstein (first ascent from Alpein), Olperer, Hochfeiler, Thurnerkamp, Rossruckspitze (first ascent from north), Dreischusterspitze, Gross Venediger, and Gross Glockner.

ACKNOWLEDGMENTS.—Mr. Craven has received for the 'Christian Inäbnit Fund' (page 366), and forwarded to Grindelwald, the sum of 88*l.* 6*s.*, contributed by members of the Club and their friends.

PROCEEDINGS OF THE ALPINE CLUB.

A General Meeting was held on January 31, 1882, Professor Bonney, F.R.S., *President*, in the chair. Messrs. Gerald Balfour, Benjamin Cotton, Walter S. Gibson, Legh S. Powell, G. Chetwynd-Stapylton, H. Chetwynd-Stapylton, A. Gurney Smith, Major J. W. A. Michell, and the Rev. F. M. Govett, were elected members of the Club.

Mr. D. FRESHFIELD, in the absence and on behalf of Mr. F. POLLOCK, *Honorary Librarian*, called attention to the extraordinary list of books

and periodicals (over seventy in all) missing from the Club Library, of which only some half-dozen had been returned since the issue of the printed list appended to the notice of meeting.

Most of the books missing had been taken from the Club-rooms since the autumn of 1880, when the library was last completely gone through and catalogued. It was impossible to say whether they had been stolen by some outsider, who had found his way into the rooms, or borrowed under a mistaken notion of their rights (defined in Rule xx.) by members, who had failed to restore them at the Secretary's summons. Whatever might be the cause of the recent losses, it was obviously impossible for the Club to submit to their continuance, or to apply its funds to the replenishment of the book-shelves of private individuals. And no member would be found to undertake the onerous post of Librarian if his efforts to form and maintain a complete Alpine library were liable to be thus defeated. No special library of the kind existed in London, and it would be a real misfortune if the growth of the Club library were checked and its completeness destroyed.

Unless the recent losses were shortly accounted for and made good, the Hon. Librarian would be compelled to ask the Committee to put all the books in locked cases, and to allow access to them only during a few hours in the week, when an attendant could be in charge, or to adopt some other equally strong measure of precaution. It would be a matter for regret if the facilities at present enjoyed by members had to be curtailed, but some such measures would be inevitable if the illicit removal of books and periodicals from the library continued.

Mr. BLACKSTONE, speaking from his experience as one of the librarians of the British Museum, concurred in the remarks and suggestion just made. The losses referred to had a most prejudicial effect in preventing members from presenting valuable books to the Club.

Mr. TUCKER, late Hon. Librarian, said it was most disheartening to find that the efforts made by himself and Mr. Pollock during the last two years to form a complete collection of Alpine books, with a corresponding catalogue, should have been partially defeated. The books must be rendered inaccessible to purloiners, or it was useless to have a Club Library at all.

The PRESIDENT hoped that the members present would take to heart the remarks that had been made, and spread them amongst their friends. Many of the volumes missing were valuable, and some had from lapse of time become almost irreplaceable. He trusted that the consciences of those who had 'conveyed' them from the shelves of the Club might yet be touched, and the books restored.

Mr. PILKINGTON read a paper entitled 'The Jungfrau from the Wengern Alp to the Aeggischnhorn without Guides;' after which a discussion took place, in which Messrs. Walker Hartley, Freshfield, Moore, H. B. George, and the President took part. A cordial vote of thanks was, upon the motion of the President, accorded to Mr. Pilkington for his most interesting paper.

A General Meeting was held February 28, Professor Bonney, F.R.S., *President*, in the chair. The Hon. Secretary and Treasurer submitted the accounts for the past year to the Club. The President congratu-

lated the Club upon the satisfactory state of the Club Finances, and, after a few remarks from Mr. Dent, the accounts were approved, *nem. con.*

Mr. Donkin read a paper upon 'Photography on the High Alps,' and exhibited his Alpine photographic apparatus. A large collection of Alpine photographs, taken by Mr. Donkin during the last four seasons in Switzerland, was also on view. At the conclusion of the paper, Messrs. Freshfield, Marcet, Trotter, Heywood Smith, Whympers, and the President spoke. Mr. Donkin having briefly replied, an unanimous vote of thanks was accorded to him by the members present.

A General Meeting of the Club was held on April 6, Professor Bonney, F.R.S., *President*, in the chair. Messrs. G. Percival Baker and Francis Warner were elected members of the Club.

Mr. C. T. DENT read a paper entitled 'An Old Friend with a New Face.' The paper, which consisted of an account of the ascent of the Aiguille du Midi, by Mr. Maund and the writer, direct from the Pierre Pointue by the N.E. arête and face, was illustrated by a sketch and route map. At the conclusion of the paper the President and Messrs. Maund, Abercromby, C. E. Mathews, Wm. Mathews, Moore, &c., made some remarks, to which Mr. Dent briefly replied. An enthusiastic vote of thanks was, on the motion of the President, accorded to the author at the close of the discussion.

Errata.

Page 361, line 9 from bottom, *for* 'W. side' *read* 'E. side.'

Page 421, line 12. The peak climbed by Mr. Hutchison lies south of the Col de la Bûche, and is really a pinnacle of the Charmoz.

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